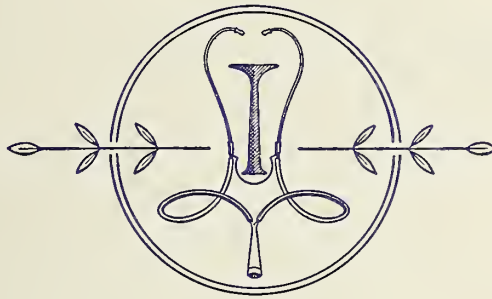


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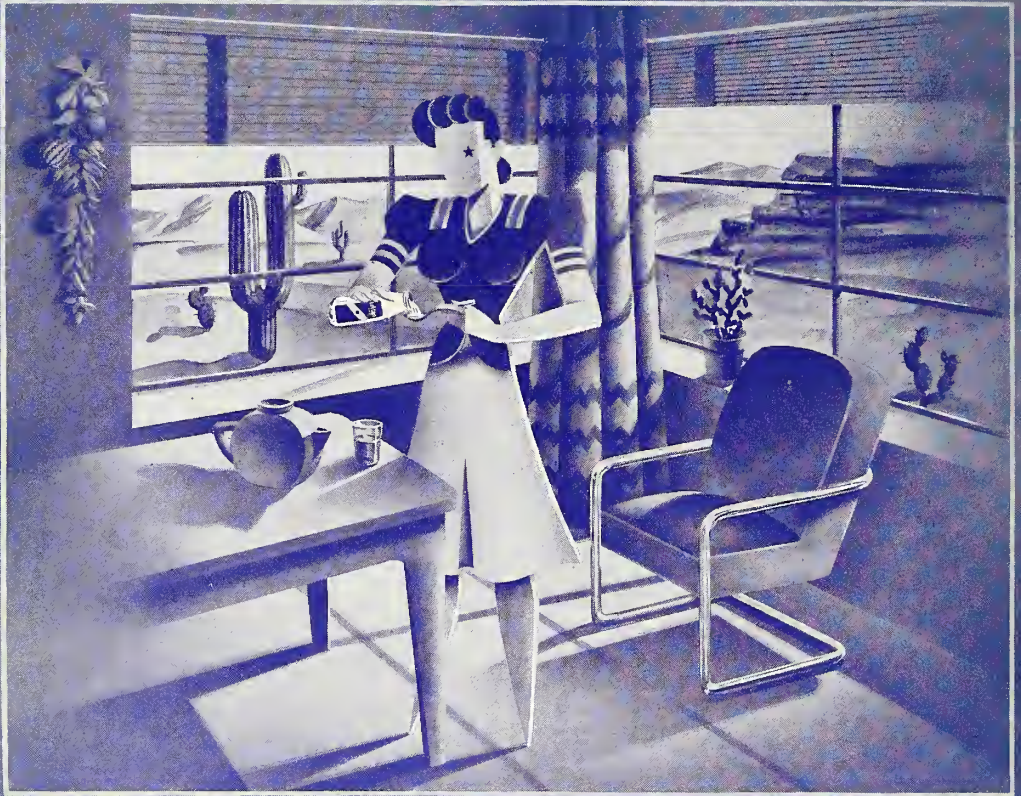
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82nd ANNUAL SESSION, Topeka, May 12-13-14-15, 1941



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THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

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Volume XLII

JANUARY, 1941

Number 1

THE DIET OF THE DOCTOR*

W. H. Olmsted, M.D.

St. Louis, Missouri

Although the advance in the knowledge of nutrition has been phenomenal in the past twenty years there has been a lag in the application of this knowledge by the laity to their own eating habits. The people are indeed diet conscious as is testified by the pages devoted to diet appearing in magazines and newspapers. Naturally the people turn to their family physicians for information regarding what they should eat in order to be healthy and I believe that the doctor should be able to answer their questions. He can be best able to answer them if he has himself eaten a diet which gives him optimum amounts of the proper nutrients. He will be a much better adviser if he has himself practiced good nutrition or, in other words, "practiced what he preaches." It ought to be possible for the nutritionist to convert what he knows about the proper amounts of minerals and vitamins into simple terms that anyone can apply to his own personal diet. The purpose of this paper will be to present simple rules, the following of which will result in the optimum intake of the proper nutrients. We will take as the brief of this presentation a diet for a doctor of average height and weight who, in the course of his practice, might require, say, 2400 calories. After the presentation of these simple rules we will justify them by showing how they result in the ingestion of optimum amounts of a few of the nutrients which are most apt to be deficient in the diet of the ordinary individual.

OPTIMUM STANDARDS OF NUTRITION

I should first like to discuss what is meant by the words "normal diet" or what standards we should use in measuring the amounts of the various nutrients that should be ingested by an adult individual. The advance in our knowledge of nutrition has been largely based on the experimental use of animals whose diets can be scientifically and accurately ad-

ministered and measured. Nutritionists use three terms in referring to the amounts of the nutrients fed to an animal. A minimum requirement means the amount necessary to prevent the development of the nutritional disease or that which will cure the specific deficiency disease. An adequate amount of nutriment means the amount which will not only prevent or cure the occurrence of a deficiency state but will insure an adequate rate of growth. Finally, an optimum diet means not only an adequate rate of growth but a state of health which implies long life and every evidence of vigorous health.

It has been shown, for instance, that the amount of calcium sufficient to prevent rickets in animals is only a fraction of that amount which will result in the storage of bone salts to such an extent as will give the optimum ash analysis. An animal may grow normally but his bones may not prove on analysis to show the optimum storage of the bone salts. The amount of vitamin A that prevents the deficiency disease xerophthalmia is only one-half the amount of A which is necessary for the perfect adaptation of vision in the dark or dim light or the amount of A which cures xerophthalmia in rats is only a fraction of the amount which must be necessarily fed in order to result in the optimum storage of the vitamin in the liver. Again, the amount of thiamin which prevents polyneuritis in animals is but a small fraction of the amount required for optimum growth or the amount which results in a saturation of the body with the vitamin so that an excess is excreted in the urine. The amount of vitamin C, ascorbic acid, which will prevent scurvy in the human being is in the neighborhood of twenty-five to thirty milligrams per day but the amount of vitamin C which is required to saturate the body so as to result in the excretion in the urine of a considerable amount is two to four times the amount needed to cure scurvy or, sixty to 100 milligrams per day.

Another standard that is used by the nutritionist is the amount of a nutriment that will not only produce normal growth and development but will result in healthy litters of offspring and will allow the mother to furnish an adequate amount of milk for the growth of the young. A diet is not optimum

*Presented at the 81st Annual Session of The Kansas Medical Society, Wichita, May 14, 1940.

in this respect unless, when it is continued into the second and third or more generations, it still results in optimum growth and nutrition. Sure has lately shown, for instance, that the amount of vitamin B necessary for lactation in the rearing of young is five or six times that amount which will cure polyneuritis.

Still another standard is the span of life of animals. The ideal life for an animal as well as for a human is a short, rapid period of growth resulting in early maturity with a long period of adult vigor and usefulness with a short period of senility. In this respect McCoy has shown for rats that a diet containing the optimum quantity of vitamins with a minimum quantity of calories results in the longest span of healthy, mature life.

It is apparent, therefore, it seems to me, that the individual who says "My health is perfect, therefore my diet must be good" may be entirely erroneous because experimental animals apparently healthy may, as a matter of fact, be shown to be quite deficient in the proper nutrients resulting in early death or inability to rear healthy young.

In deciding what is the proper amount of various nutrients which constitute optimum nutrition we can only depend on the facts that are at present available bearing in mind that the future may reveal that to avoid the degenerative diseases these amounts of nutrients which we now consider optimum will have to be revised.

Most assuredly we have not yet discovered all the vitamins. The latest experimental work clearly reveals this. The discovery of the newer vitamins is brought about by the use of combinations of the vitamins that can be purified in the chemical sense. When one gives an animal a diet of pure casein, crystalline sugar, pure fat, crystalline salts and the proper amounts of the purified vitamins that are now known, the animal will not grow at the optimum rate unless extracts of liver or yeast be added to the diet. This clearly indicates the presence of some unknown vitamins. At present, besides protein, fat and carbohydrate, there are thirteen, perhaps more, minerals that are necessary for nutrition. There are at least eleven vitamins that have been purified in the true chemical sense.

The minerals that are known to be necessary for nutrition: calcium, phosphorus, sodium, chlorine, potassium, sulfur, magnesium, iron, iodine, copper, zinc, cobalt, manganese.

The vitamins that are now prepared in chemically pure form: Fat soluble:

Vitamin A—carotene

Vitamin D—calciferol and seven-dihydro-cholesterol

Vitamin E—the tocopherols

Vitamin K—the naphthoquinones

Water soluble:

B complex—thiamin

riboflavin

nicotinic acid

B₆

pantothenic acid

choline

Vitamin C—ascorbic acid

SIMPLE RULES FOR AN OPTIMUM DIET

Milk. For the adult one pint of fresh milk per day or half pint of condensed milk. For the child one quart of fresh milk per day or one pint of condensed milk. For the pregnant and lactating mother one and one-half to two quarts of fresh milk per day. One ounce of cheese is a good substitute for one-half pint of milk.

Egg. One egg a day or at least three a week.

Vegetables. Potatoes—a large helping equal to two-thirds of a measuring cupful or one-third pound. Two or three helpings of a half cup each of one of the watery vegetables such as the green leaves, tomatoes, peas, carrots, snap beans, or cabbage.

Fruits. Two servings a day amounting to three-fourths pound.

Meats. One large serving a day amounting to one-third of a pound or three to four ounces.

These five groups of foods in the quantities set forth furnish the optimum amount of vitamins, most of the minerals and the protein needed for growth.

The sixth group of food stuffs are the bread stuffs and sugar whose function is to furnish calories. In this group we include bread, biscuits, rolls, crackers, cake, cookies, pies, macaroni and rice.

THE PROOF THAT THESE RULES FURNISH THE OPTIMUM AMOUNT OF THE NUTRIENTS WHICH ARE MOST APT TO BE DEFICIENT IN OUR DIETS

The following diet follows the rules above set forth. It amounts to 2400 calories which is sufficient for the average doctor.

2400 Calories
(Calories)

Milk—1 pint	332
Butter—1 oz. (30 g.)	234
Egg—1	69
Meat—150 gms. (1/3 lb.)	512 @ 275 per 100 g.
Potato—150 gms. (2/3 c.) ..	126
Water veg.—3 servings (3/4 lb., 300 gms., 1 1/4 c.)	60 @ 20 per 100 g.
Tomatoes, string beans, peas, greens, carrots, cabbage.	

Fruits—2 servings ($1\frac{1}{4}$ c., $\frac{3}{4}$ lb., 300 gms.).....	180 @ 60 per 100 g.
Citrus fruits, prunes, peaches, apricots, bananas, apples, pears.	
Bread—3 slices (75 gms.)....	180
Chocolate cake—1 serving....	433
Fat (used in cooking)—1 oz.	270
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Let us analyze this diet for a few of the nutrients which are most frequently found deficient in our diets.

Calories: Figure I shows the distribution of the calories in this diet. If one wishes to reduce the calories without interfering with the amounts of vitamins the elimination of chocolate cake and the fat used in cooking would reduce the calories by 700. We have taken chocolate cake as a sample of pastries as they are consumed by Americans. Pie could be substituted for the cake. We have not listed cream but an ounce of cream, the usual amount placed in a cup of coffee, is equal to approximately a serving of butter or that amount that is spread on a slice of bread. The amounts of vegetables and fruits is more than is eaten by the average person but we wish to show that these amounts are highly desirable.

The two minerals which are commonly deficient in our diets are calcium and iron.

Calcium: Figure II shows the distribution of calcium. Sixty-five per cent of the calcium in this diet is derived from the pint of milk. We hear much about the vegetables as a source of minerals but a glance at this figure shows even where vegetables and fruits are present in unusual amounts, a diet still depends on the milk as the main source of calcium. The total amount of calcium in this diet is 880 milligrams. The normal amount as given by Sherman and generally agreed to by nutritionists is 680 milligrams. Thus we have 200 milligrams in excess of the normal requirement. It is practically impossible to ingest a normal amount of calcium without milk being present in the amount of a pint a day.

Iron: Figure III shows the distribution of iron. The iron from meat and egg is without doubt available to the body. It is doubtful if the iron from milk is available at all, and certainly it has been shown that some of the iron from the vegetables is not available. The normal requirement for iron is from eight to fifteen milligrams per day. In this diet six milligrams is derived from eggs and meat. The proper amount of iron in a diet is the best insurance against the development of simple anemia but when the latter occurs it is generally admitted that one must depend upon iron salts administered as such.

Vitamin A: Figure IV shows the distribution of

vitamin A. In calculating the vitamin A of this diet we took peas, tomatoes, and string beans as the vegetables. Vegetables vary a great deal in their content of vitamin A or carotene. The green leaves as represented by spinach, kale, dandelion, turnip or beet tops contain enormous quantities of carotene ranging from 10,000 to 40,000 units per serving. Carrots contain 5700 units per serving, tomatoes 2,000, peas 1300, string beans 1000, while asparagus, cabbage, onions and turnips contain none. In the above diet we have selected for the fruits orange or grapefruit juice, one-half cup, one apple, and a serving of peaches. Just as is the case with the vegetables fruits vary a great deal in their content of vitamin A. Those richest in this vitamin are apricots, peaches and prunes. Bananas contain a good amount but apples, the citrus fruits, pears and pineapple contain very little. The green vegetables contain more carotene than any other source. The source of vitamin A in fruits in this diet comes from the peaches. Milk, butter and eggs account for the remaining source of vitamin A, about 2800 units. The normal requirement of vitamin A has been agreed upon as in the neighborhood of 5000 International units. This diet, because of its selected fruits and vegetables, contains 72000 International units, a goodly excess above the optimum requirements. Of late it has been shown that carotene is at least only one-half as efficient as vitamin A itself in the control of night blindness in animals as well as man. This means that the vitamin A from vegetable source (vitamin A in vegetables and fruits is in the form of carotene) is needed in twice the amounts as vitamin A itself (dairy products, eggs and liver contain the vitamin itself). Figure IV demonstrates how little vitamin A comes from meat, potatoes, bread stuffs and fat.

Thiamin: Figure V shows a distribution of thiamin B₁. Although we have been told that the best sources of this vitamin are from whole cereals, nevertheless, the latest analyses of meats show that they play a much more important role as a source for thiamin than was formerly supposed. In fact, one serving of pork a day will supply the whole of the requirement of this vitamin. Pork is about three times richer in B₁ than beef. Vegetables, milk, and fruits are the next best sources. If for the white bread we substituted whole wheat bread the thiamin would be increased by ninety-six International units. Undoubtedly, whole wheat bread is an additional guarantee for the adequate intake of thiamin and I believe that doctors would do well if they practiced taking whole wheat bread instead of white. The distribution of thiamin in vegetables and fruits is fairly consistent, the exceptions being potatoes and peas which are unusually good sources. The normal

intake of thiamin should be from one to two milligrams a day or 300 to 600 International units. The diet as above given contains 470 International units.

Riboflavin: Figure VI shows the distribution of riboflavin. Riboflavin like thiamin is a water soluble vitamin. Its distribution in vegetables and fruits is similar to thiamin. In the case of milk, however, there is a great deal more riboflavin than thiamin so that milk is the best source for this vitamin. Like thiamin the meats contain good amounts of riboflavin so that they stand as the next best source. The vegetables and fruits, even in the amounts here suggested, would hardly suffice for a source of this vitamin. The normal intake of riboflavin should be in the neighborhood of one to two milligrams or about 500 Sherman units per day. This diet furnishes 750 Sherman units.

Nicotinic Acid: Nicotinic acid, the third of the B vitamins that we are analyzing, has not been quantitatively analyzed in foods. We do know, though, from the tables of Sebrell, the foods that are a good, fair, slight or no source for this vitamin. By good he means an amount that will prevent or cure pellagra. The following is a list of the foods in our diet as classified by Sebrell: Good—meat and eggs;

fair—milk and vegetables; slight—butter; none—potato, fruit, cake, bread. We believe that this diet contains sufficient amounts of milk, egg, meat and vegetables to form an abundant source for nicotinic acid.

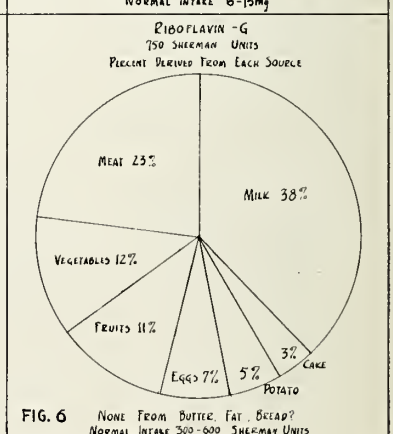
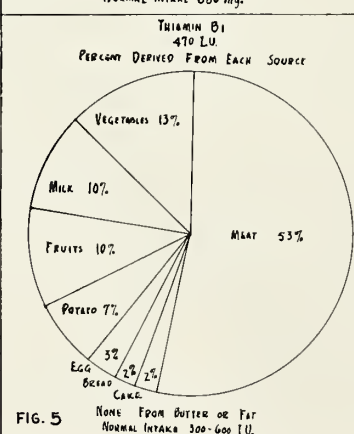
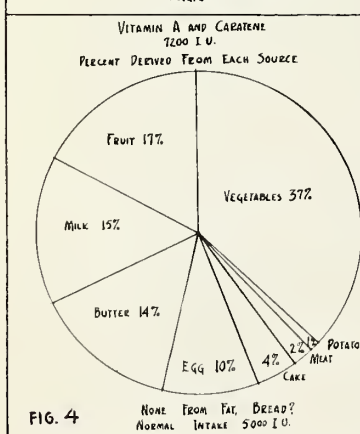
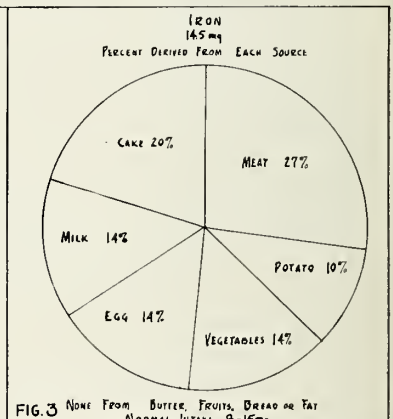
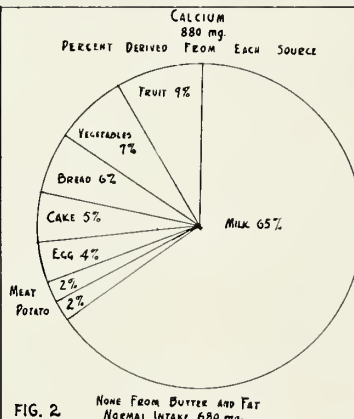
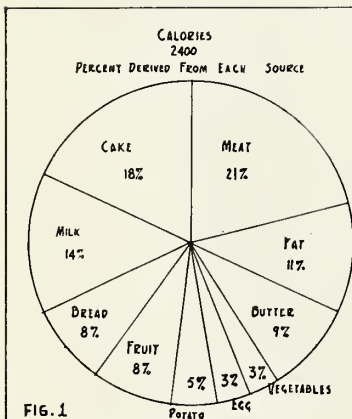
NICOTINIC ACID

Sebrell's Classification of Sources:

Good	Fair	Slight	None
Meat	Milk	Butter	Potato
Egg	Vegetables		Fruits
			Bread
			Cake
			Fat

Normal intake twenty-five mg.

Ascorbic Acid: Figure VII shows a distribution of ascorbic acid. The sources for this vitamin are limited to fruits and vegetables. Of the fruits the citrus group are in a class by themselves. Bananas, apples, peaches and pineapple contain moderate amounts, while apricots, pears and prunes have very little. The only rivals for the citrus fruits are the green vegetables. Unfortunately vitamin C is very soluble and we cook the green vegetables in water. It has been shown that half of the vitamin C is lost in the cooking water since it is our custom to throw

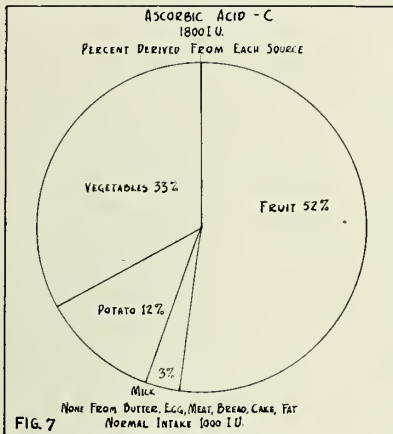


away the water in which vegetables are cooked. Thus, a serving of the green vegetables will give only about half the amount of vitamin C that is present in an equal amount of the citrus fruits. The other vegetables contain good quantities of vitamin C particularly cabbage, peas, tomatoes and turnips. If one consumes enough of these vegetables it is entirely possible to get a normal intake of vitamin C without ingesting any fruit. The normal intake of vitamin C is from sixty to 100 milligrams a day which amounts to one to 2000 units. 1000 units probably is adequate. The above diet contains 1800 International units of vitamin C.

THE VALUE OF EACH CLASS OF FOOD STUFFS

We have just shown the sources of some of the nutrients that are of special importance in our diet. Now let us review each class of food stuffs and show for what nutrients it is a particularly good source.

Milk is the one important source for calcium.



Since man does not eat bones he must depend on the calcium of milk. In addition it is an important source for vitamin A, riboflavin, nicotinic acid and when irradiated, vitamin D. The quality of milk protein is excellent. It is a fair source for thiamin.

Butter is an important source for calories and vitamin A.

Egg is an important source for protein, iron, vitamin A and nicotinic acid.

Meats are an important source for calories, protein, phosphorus, iron, sulfur, thiamin, riboflavin, nicotinic acid, choline and pantothenic acid.

Liver is a veritable storehouse for many of the vitamins—iron, copper and its protein is of very high value. Liver once a week is an excellent dietary practice.

Potato is an important source for ascorbic acid and since we almost always eat it with fat, it forms an excellent source of calories.

The watery vegetables are important sources for

potassium, nicotinic acid, thiamin, riboflavin and ascorbic acid. Furthermore, when eaten in sufficient quantities they lend bulk to the feces and help in the normal evacuation of the bowels.

Fruits are a good source for potassium. Apricots and prunes are a good source for iron and fruits add riboflavin, thiamin, ascorbic acid and carotene to the diet. Like the vegetables they help in the elimination of the bowels.

The five classes of food stuffs—dairy products, egg, meats, watery vegetables and fruits are protective foods, that is, they guarantee those nutrients which experimental work proves are necessary for growth, vigorous adult life, long life and the production of healthy young.

The bread stuffs and sugar are our main source for calories but they also are an important source for protein. Whole wheat cereals and bread are important sources for iron, copper and thiamin.

The fats besides being a good source for calories are an excellent source for B₆ which late work seems to show is necessary in human nutrition. In the vegetable fats are found the tocopherols which in animals are necessary for reproduction but have not been proven in man to be essential in this respect. Furthermore, the fats are sources for the unsaturated fatty acids which in animals at least are necessary for proper metabolism of fats.

CONCLUSIONS

It has been shown that very simple rules can result in what we believe to be the optimum intake of the nutrients as they are now known. It is to be emphasized that it is a quantity of the protective food stuffs which is the most important consideration.

An airplane pilot who is not provided with oxygen begins to lose his mental and physical efficiency at an altitude of about 12,000 feet, Harry G. Armstrong, Toronto, Canada, states in Hygeia, The Health Magazine. His symptoms are pronounced at 18,000 feet. Between 18,000 and 22,000 feet his actions are like those of a drunken man, and he becomes either sleepy or very active with outbursts of laughter or rage. At about 25,000 feet unconsciousness occurs and unless descent to a lower altitude is made death results within a few minutes.

Let us as physicians, endowed with the degree M.D., start to place emphasis on that degree. No one else can use it. Use "M.D." in your speech, in your correspondence, on your signs, prescription pads, bill heads, etc. Gradually the public will start to discriminate. In this positive way we can gradually but most effectively offset the parasitic influence of so-called "doctors" who are not M.D.'s—Rochester Medical Bulletin.

AN OUTLINE OF THE TREATMENT OF ACUTE INTESTINAL OBSTRUCTION*

Thomas G. Orr, M.D.

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For purposes of discussion, the treatment of acute obstruction of the small bowel may be considered under the following headings:

1. Operation.
2. Restoration and maintenance of water and chemical balance and nutrition.
3. Prevention and relief of bowel distention by decompression.
4. Use of peristaltic stimulants.
5. Application of heat to the abdomen.
6. Oxygen therapy.
7. Bed posture.
8. Transfusions.

OPERATION

Early operation is always indicated when the bowel lumen is mechanically occluded. This does not mean that immediate operation is always advisable. The time and method of operation must depend upon the type and location of the obstruction and the condition of the patient. The experience of recent years has emphasized the importance of supportive treatment both before and after operation. If the obstruction is of short duration and the patient has not been seriously depleted, operation may be done at once, but if dehydration, hypochloremia, abdominal distention and rapid pulse have developed, pre-operative administration of sodium chloride solution and gastric and intestinal suction are always indicated to improve the patient's general condition. While this preliminary treatment is necessary to minimize the operative risk, it is equally important that such treatment should not be prolonged beyond a few hours before surgical relief is instituted. Since patients receiving supportive treatment may show very definite general improvement it is appropriate to warn against delaying operative treatment on the false assumption that operation may not be necessary.

Simple occlusion of the intestine can usually be relieved by direct removal or release of the cause of the obstruction. However, certain conditions may be found or complications may arise during the operation which make it necessary to resect or repair portions of the bowel, thereby adding to the operative hazard. Any unnecessary handling or attempts

to empty the intestine by stripping are to be avoided.

If strangulation of the bowel is suspected, early operation is urgent to avoid necrosis and the danger of peritonitis from rupture of the necrotic segment. Release of the constriction interfering with the circulation may be sufficient providing the surgeon is positive that the blood supply returns to the gut, insuring its viability. If irreparable necrosis has resulted, the extent of operation must depend upon the patient's general condition. Frequently it is much safer to exteriorize the necrotic segment and remove it after closing the abdominal wall, leaving the open ends of the gut protruding to be closed at a later date by anastomosis or by the Mickulicz technic. Operative procedures upon acutely distended gut are always dangerous. In a patient acutely ill with obstruction, resection and anastomosis not only consume valuable time, but the danger of peritonitis is great. Leakage from the distended gut of intestinal obstruction usually means disaster.

Enterostomy as a treatment for mechanical intestinal obstruction is always an operation of necessity and not of choice. There are indications for its use both as a primary and as a supplementary procedure. In those patients who are too ill for exploration and release of an obstruction, enterostomy may be life-saving. After relief of an obstruction, enterostomy is often advisable to drain a markedly distended bowel or to protect a damaged gut wall or suture line. It is not free from danger. Peritonitis and abdominal wall infection may result from leakage of intestinal contents when a tube and sutures are placed in an overdistended gut wall. The danger of enterostomy may be reduced to a minimum by isolating a segment of bowel with intestinal clamps and by aspirating all gas and liquid content before placing sutures and introducing the tube. Thoughtful care must be used in selecting the proper patients for enterostomy. An error leading to a fatality may be made if enterostomy alone is done for an obstruction due to a strangulated section of the bowel. When an abdomen is opened and bloody fluid is found, the surgeon should definitely assure himself that no strangulation of the gut is present before enterostomy is done. Enterostomy will not successfully drain the bowel if it is paralyzed. Peristalsis must be present to force the liquid and gas content of the gut through the enterostomy tube. High jejunostomy is of very doubtful value in the treatment of any type of obstruction. The logical place for intestinal drainage by enterostomy is just proximal to the point of obstruction. It is the author's opinion that the suction method emphasized by Wangenstein¹ is far more efficient in emptying the stomach and upper intestine than high jejunostomy.

*Presented at the 81st Annual Session of The Kansas Medical Society, Wichita, May 16, 1940.

When an enterostomy is done, the technic of Witzel or one of its modifications, using a size sixteen or eighteen French rubber catheter, is the safest operation. After the catheter is fixed in the gut, it should be passed through the omentum and when possible the omentum fixed to the suture line for added protection against infection and adhesions.

RESTORATION AND MAINTENANCE OF WATER AND CHEMICAL BALANCE AND NUTRITION

In any obstruction of the small intestine, dehydration soon becomes a factor of prime importance due to lack of liquid intake and vomiting. To restore and maintain a sufficient supply of water for the proper functioning of the chemical processes of the body is one of the most essential phases of the treatment of bowel obstruction. As emphasized above, the parenteral administration of water and sodium chloride should precede operation in all cases showing the effects of dehydration and should be continued after operation until the patient is able to drink and retain a quantity of water sufficient to supply the body needs.

The initial quantity of water needed varies much, depending upon the anatomic location and duration of the obstruction. The general appearance of the patient is a helpful guide. The daily intake for the normal individual under usual conditions varies from two to three liters. In cases of intestinal obstruction, it must be recognized that the lack of normal intake does not present the total loss of liquid to the body. The secretions into the stomach and upper intestine are also lost by vomiting or through the suction tube. The loss may at first amount to several liters per day.

By clinical experiments, Maddock and Coller² have been able to estimate with considerable accuracy the fluid needs of the dehydrated patient. When a patient is first seen with signs of dehydration, such as a hot dry skin, a dry tongue, sunken eyes, rapid pulse, a slight fever, and insufficient urine output, these authors have estimated that there has been a loss of liquid approximately equal to six per cent of the body weight. A patient weighing sixty kilograms would therefore require six per cent of 60,000 Gm. or 3,600 c.c. as an initial supply of water to relieve existing dehydration. The quantity of water estimated for the daily uses of the adult body are two liters for water of vaporization (loss through skin and lungs) and one and one-half liters for urine. It is, therefore, evident that a seriously dehydrated patient would require in the first twenty-four hours 3,600 c.c. plus 2,000 c.c. plus 1,500 c.c. to restore and maintain water balance. In addition to this requirement, any losses by vomiting, bleeding, fistulas, diarrhea, or massive exudation should be

estimated and the quantity restored to the body. After the initial supply of water, the average daily necessary intake may be estimated as 3,500 c.c. This quantity should be decreased as the patient is able to retain food and liquid given by mouth.

Obstructions of the intestine causing a loss of upper alimentary tract secretions are often associated with marked chemical changes in the body which may be demonstrated by blood examination³. This loss is particularly marked if the obstruction is high or prolonged. The important blood changes are a loss of chlorides (hypochloremia), an increase in the carbon dioxide combining power and an increase in the non-protein nitrogen. After prolonged starvation, a disturbance in nutrition may be sufficient to decrease the blood serum protein^{4,5}. Chemical changes assume less importance in those cases in which there is early relief of the obstruction. The best gauge of the extent of body chemical change is an estimation of the blood chlorides. In the treatment of intestinal obstruction the blood chlorides should be restored to normal and maintained within normal limits. By so doing, the acid-base imbalance is corrected, destruction of body protein minimized, and proper water distribution to the body tissues assured. After a marked reduction has occurred in the blood serum protein, excessive quantities of sodium chloride may result in edema of the subcutaneous tissues or edema of the lungs.

It is quite evident that metabolic equilibrium cannot be maintained when food cannot be taken by mouth and utilized by the body in a normal manner. It is also quite true that food supply is of much less importance than water supply in the treatment of intestinal obstruction. Dextrose may be freely given, however, to such patients and will partially furnish the needed nutrition.

Water, sodium chloride, and dextrose may be given in the vein under the skin and by rectum. Patients entering the hospital with marked hypochloremia may be given 250 to 500 c.c. of two and one-half per cent sodium chloride solution by vein to promptly restore the chlorides to normal. Coller and his associates⁶ have estimated that for each 100 milligrams reduction in plasma chlorides the patient should be given 0.5 Gm. of sodium chloride per kilogram of body weight. In most cases a physiologic solution will suffice. Dextrose in five per cent solution is preferable to higher percentages to avoid the dehydration effects of hypertonic solutions. It is unwise as well as unnecessary to give hypertonic solutions under the skin. Subcutaneous tissues tolerate well physiologic sodium chloride solution alone or in combination with five per cent dextrose. Ringer's or Hartmann's solutions may be used instead of the plain sodium chloride solution and are preferred by

many clinicians. Of the methods cited above for administering solutions, phleboclysis and hypodermoclysis are, from the standpoint of quantitative accuracy, more dependable than proctoclysis. Proctoclysis is satisfactory when it works properly, but too frequently the solution is expelled by the sick patient and an accurate estimation of the body intake is impossible. The discomfort incident to increased distention by water introduced into the rectum is also a valid reason for not using proctoclysis. It is also doubtful if dextrose is absorbed by the large bowel in sufficient quantity to be of value⁷.

Solutions injected by any of the three methods under discussion should be given slowly. Fluids may be safely administered by vein at the rate of sixty to eighty drops per minute. The rate of absorption under the skin varies widely with different patients and should be controlled by preventing tumefaction of the part. A rapid instillation into the rectum will stimulate expulsion and loss of fluid. A very satisfactory routine method of supplying the estimated daily requirement of 3,500 c.c. of fluid is accomplished by injecting 2,000 c.c. into the vein and 1,500 c.c. under the skin. To distribute the intake throughout the day, one of these injections may be given in the forenoon and the other in the evening. The injections should be discontinued at night to avoid disturbing the patient's rest. Since embolism is considered by many a dangerous complication of continuous phleboclysis, intravenous injections in interrupted doses are preferred⁸. To control the salt intake the blood chlorides should be estimated every second day. If they are found normal or above normal, dextrose solution alone should be given until the need of sodium chloride is evident.

There is some danger of giving too much water and sodium chloride. The overburdening of a weakened circulatory system by increasing the blood volume or the production of a general edema of the lungs must be avoided⁹.

PREVENTION AND RELIEF OF BOWEL DISTENTION BY DECOMPRESSION

A proper appreciation of the danger of overdistention of the bowel is essential for logical treatment. A patient is usually not dangerously ill unless there is marked distention of the stomach or intestine. Increased pressure within the lumen of the gut seriously interferes with the blood supply of its wall.

It is probable that there is no absorption of toxic products from the contents of the obstructed intestine until overdistention has damaged the circulation resulting in necrosis.

To relieve distention in the stomach and upper small intestine, continuous suction drainage by an indwelling nasal Levine tube is indicated. Siphon-

age with suction is superior to simple siphonage, since the former will more readily and completely evacuate the gases as well as the liquid content. The apparatus designed by Wangensteen or one of its slight modifications is ideal for this purpose. This method not only reduces the distention but permits the patient to drink water freely which adds greatly to his comfort. The nasal tube generally causes very little discomfort and may be left in place for several days. The indwelling tube is also of value in testing the return of bowel function. It may be clamped at two or three hour intervals when liquid diet is started to determine the tolerance of the bowel for liquid and food. If the aspirated quantity at the end of the closed tube period is less than the intake for that period, the tube may usually be safely removed. The Miller-Abbott¹⁰ double lumen tube may be introduced the entire length of the small intestine above the obstruction. It is useful not only to decompress the bowel but may be of value in locating the point of obstruction.

Attempts to reduce distention by repeated enemas are of doubtful value. Enemas should be used with a full realization that gas and feces obtained from the colon by such measures may in no way affect the obstructed bowel above. One must beware of a feeling of false security which might arise after a successful evacuation of the lower bowel. Experiments have shown that the type of enema commonly used does not stimulate peristalsis in the small intestine and cannot be expected to aid in its evacuation¹¹.

Enterostomy as discussed above has its value in the mechanical reduction of intestinal distention.

USE OF PERISTALTIC STIMULANTS

By preventing and reducing distention of the gut, muscle tone and rhythmic contractions are maintained. As long as a bowel retains its power to contract, the blood supply to its walls is intact. A bowel wall cannot be active without an adequate circulation. Morphine stimulates the tone and rhythmic contractions of the small intestine, and may be given with assurance in sufficient quantity to make the patient comfortable^{12,13}. Since sodium chloride in hypertonic solutions will stimulate peristalsis, it is reasonable to assume that it may be a factor in maintaining bowel tone when given in physiologic solution in sufficient quantity to maintain the chlorides at a normal level in the body.

The use of spinal anesthesia to evacuate the bowel is a rather drastic treatment and of doubtful value. It certainly should never be used for this purpose as long as the bowel is obstructed. Pituitary extract and similar peristaltic stimulants should be used with caution and like spinal anesthesia should not

be employed as long as obstruction exists. If peristaltic stimulants are used after the obstruction has been released, it is advisable to begin with small doses. It is the opinion of Ochsner¹⁴ that stimulating drugs are of little or no value in the treatment of ileus. Some clinical reports, however, indicate that they are helpful in selected cases when judiciously used. Gordon¹⁵ indicates that prostigmin is a safe stimulant to use.

APPLICATION OF HEAT TO THE ABDOMEN

Moist or dry heat applied to the distended abdomen is beneficial when judged by clinical observation. It is believed by some authors that heat has a direct effect upon the gut by increasing tone and stimulating peristalsis. Heat applied to the abdomen at a temperature of 109 degrees will penetrate to the peritoneum if there is not too much subcutaneous fat¹⁶. Since no known harm results from applying heat, if blistering is avoided, its use is recommended. Heat applied either as moist packs or as dry heat from electric bulbs over the abdomen seems to be equally effective.

OXYGEN THERAPY

Oxygen is probably too little used in serious cases of intestinal obstruction. With abdominal distention and changes in blood composition, the vital capacity of the lungs and oxygen carrying capacity of the blood are decreased. The recent work of Fine and his associates¹⁷ presents a new viewpoint in oxygen therapy that may prove to be of value in reducing abdominal distention. They found that the absorption rate of gas within the bowel is increased in direct proportion to the quantity of oxygen given. Thalheimer¹⁸ emphasizes the teaching of Haldane that mild degrees of anoxemia have serious effects upon the nervous system and moderate or severe degrees may be fatal. Oxygen therapy administered by tent, nasal tube, or oxygen room is recommended for patients who are very ill with intestinal obstruction. The administration of oxygen should not be postponed until the patient is cyanotic or the condition seems hopeless.

BED POSTURE

Comfort and vital capacity are increased by raising a patient's back rest to a semisitting posture. This position may be altered at intervals to rest the patient. Deep breathing and frequent turning are important to minimize the danger of congestion at the lung bases.

TRANSFUSIONS

The transfusion of blood as a supportive treatment for patients with bowel obstruction has been favorably recommended. It is especially indicated after an illness of several days when protein depletion is imminent. Wangenstein¹⁹ has shown that

blood loss may be considerable in volvulus, intussusception, strangulated hernias, adhesive obstructions with compromise of the blood flow and mesenteric thrombosis.

CONCLUSIONS

1. There is no substitute for early operation when the lumen of the bowel is completely occluded. All other treatment, though very necessary, must be considered supportive and not curative.
2. Certain types of inflammatory or adhesive obstruction may be permanently relieved by proper treatment without operation.
3. Supportive treatment by administration of sodium chloride solution and methods of stomach and intestinal decompression are indicated as pre-operative therapy to improve the operative risk in all cases showing the effects of dehydration and hypochloremia. Prolonging such treatment beyond a few hours is unnecessary and might prove fatal, especially in cases with strangulation of the bowel.
4. Extensive operations upon an acutely obstructed bowel are hazardous except in the early cases. The briefest operation with the least possible trauma is the procedure of choice. It is safer to follow the collapsed bowel upward to an obstruction than to eviscerate and follow a distended bowel downward to the point of obstruction.

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THE GOITER PATIENT

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Disturbances of the thyroid gland are divided into: (1) developmental, (2) metabolic, (3) proliferative, (4) degenerative and their combinations. At this time the last two and their combinations are the only ones of interest in the discussion of the goiter patient. Diseases of the thyroid gland are so complex and interwoven that a definite set classification as to type is impossible. Classification can only be based on what pathological anatomical change is present at the time the diagnosis is made.

An individual at adolescence will have a simple colloid goiter, at age thirty it may be a non-toxic nodular goiter, at age forty a toxic nodular goiter, or it may have escaped these last two stages and may have become an acute toxic goiter with eye signs. Proliferative changes in the acinal and extra-acinal cells is the earliest and most definite pathological finding of a diseased gland, as hyperplasia always means hyperfunction unless there is also an associated degenerative process. Degeneration in a gland must be looked at in the light of how much is senile degeneration and how much is a pathological terminal stage. The difficulty has always been and still is to correlate the clinical and pathological

findings and diagnose a certain type of goiter and recommend a certain type of treatment.

The acute thyroid with its definite hyperplastic and clinical findings which are called Grave's disease, is the most easily diagnosed and understood. However, even this at a later date will show degenerative changes and signs of myxedema. The chronic thyroid which is a progressive disease from one stage to another, will show both recent changes and evidences of disease of bygone years. A Grave's disease established on an old colloid goiter may in areas show just a simple or nodular colloid goiter with proliferative changes in other areas.

Whether all goiters start in adolescence is not definitely known but evidence points very strongly in this direction. Also, the exact effect of iodine is not known, but we do know that it has a very desirable action of regression upon the adolescent goiter, while very little if any action on the adult goiter. The reason for this is evident, the adolescent goiter is due to an accumulation of colloid in the acini which is a disturbance of physiological function while the goiter after the age of twenty-one begins to show hyperplasia from which there is no restorative process. Thus, we see that goiter is not a disease, but various stages of a disease which changes with the elements of time and age.

However, it is necessary for discussion and clarity to attempt a classification and to describe what is meant and included in that classification. The following classification has proved as practical as any

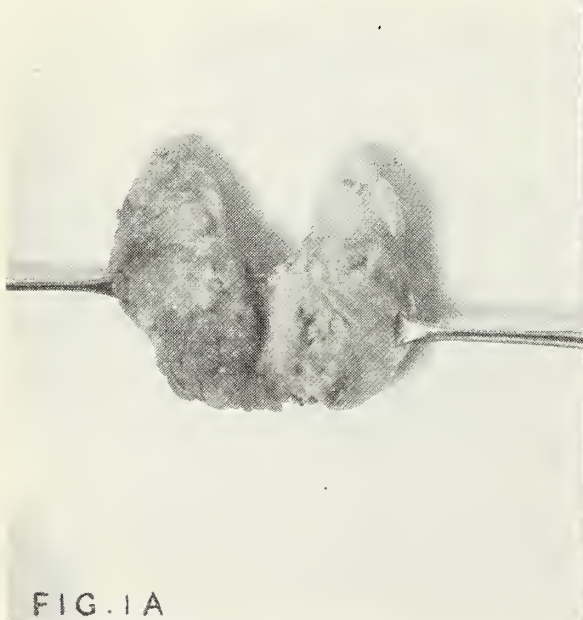


FIG. 1. NON-TOXIC DIFFUSE GOITER.

A. Gross pathology shows smooth, uniform, pale elastic goiter.

B. Microscopic pathology. Flat, low cuboidal epithelium, normal variations in size of acini, pink uniform colloid.

and will be used throughout the remainder of the discussion:

1. Non-toxic diffuse, simple adolescent colloid goiter.
2. Non-toxic nodular (nodular colloid goiter).
3. Toxic nodular goiter.
4. Toxic diffuse (Grave's disease).
5. Foetal adenoma.

The first three of these represent degeneration and when toxicity manifests itself it is due to a degeneration and produces a cardio-toxic stage. The toxic diffuse goiter is a wholly different picture. It presents a picture of proliferative hyperplasia and its toxicity is due to excessive gland activity and secretion.

Foetal adenomas are not really goiters at all but are tumors of the thyroid gland, but due to the often abuse of foetal adenomas being called goiters, I have included them in the discussion as they are often implanted in a colloid or nodular goiter and the patient becomes toxic from a degenerative process.

The non-toxic diffuse goiter or simple colloid goiter is as the name implies, a diffuse, smooth, movable, bilateral goiter produced by an overabundance of colloid in the acini due to a functional imbalance of disturbed metabolism and not due to a hyperplasia or hypertrophy. When hyperplasia occurs, which is usually not until the patient is past twenty-one years old, the goiter then becomes a nodular type which may or may not become toxic but according to Hertzler, always produces a cardio-

toxic heart years later. This is the only type of goiter in which complete recovery is possible without surgery as here cellular proliferation has not taken place. The normal course of this type of goiter is regression at puberty with a rebalance of the entire endocrine system to normal. In girls there is often an associated dysmenorrhea and irregular menses.

The non-toxic nodular is as its name implies a goiter of the diffuse type which has become nodular to such an extent that the clinician can feel the bosselations and firmness of the gland. When the gland reaches this stage it is past all possibilities of receding, as hyperplasia has taken place in the acini. The epithelium of the new acini are flat and non-toxic as expressed clinically by a normal basal metabolism.

The toxic nodular goiter is a further step in the preceding goiter type which has become characterized by a degeneration of the acinal hyperplasia which results in a toxicity evidenced pathologically by basophilic staining colloid and degeneration of the acinal cells. The question is what produces the toxicity, Hertzler believes it is due to the histochemistry of the colloid and manifests itself clinically by cardiac degeneration and fatigability. This goiter, therefore, is the product of aging on a simple diffuse colloid goiter. Occasionally this picture of slow toxicity may be complicated with a sudden onset of toxicity evidenced by eye signs, rapid pulse, rapid loss of weight and rapid termination of cardiac degeneration and death.

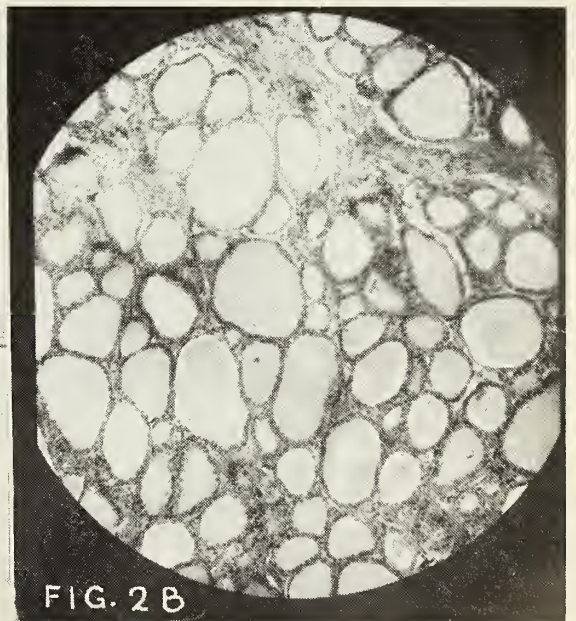
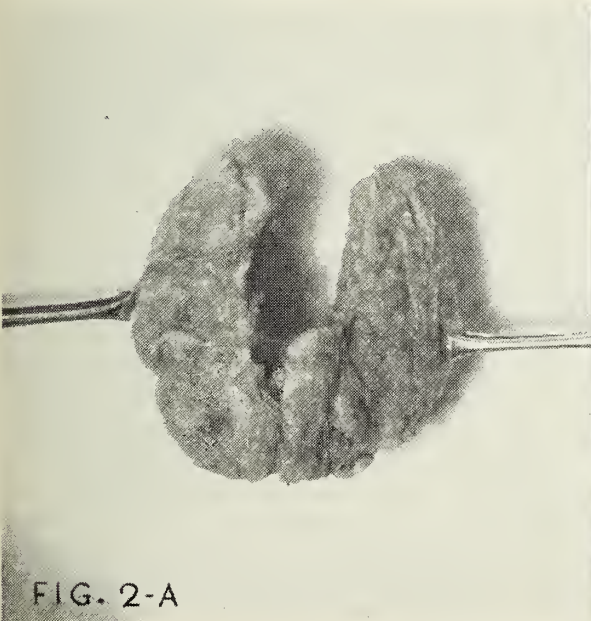


FIG. II. NON-TOXIC NODULAR GOITER.

A. Gross pathology shows a bosselated, firm, translucent gland.

B. Microscopically shows new acini between old acini, dilation and cystic degeneration, compression, increase in fibrous tissue septa.



FIG. 3 A



FIG. 3 B



FIG. 3 C

The diffuse toxic goiter or exophthalmic goiter or Grave's disease, is a purely hyperplastic toxic, smooth goiter due to hypersecretion and not preceded by a simple colloid goiter, but arising early in life as a rule and from a normal thyroid gland. However, some difference of opinion exists as to whether this type may not arise from an early simple diffuse type of goiter which has not shown much increase in colloid. Pathologically, this gland is diffuse, smooth, firm and characterized by hyperplasia of the acinal cells and acidophilic colloid. Where eye signs are present, papillation will always be found with a piling up of cuboidal and columnar type

FIG. III. TOXIC NODULAR GOITER

A. Gross pathology shows more firm gland, red in color, fibrous tissue increase, hemorrhagic and cystic areas, degenerated lobules, and occasional calcified areas.

B. Cross section of gland showing lobulations and fibrous tissue increase.

C. Microscopically there is degeneration of colloid, atrophy of epithelium, increase in fibrous tissue, areas of hemorrhage and necrosis.

acinal cells, often filling the entire acini. This type of goiter may undergo periods of remission and exacerbation of symptoms.

Hertzler gives another type of goiter or stage which he calls the cardio-toxic goiter, which is described as the end stage of the toxic nodular colloid goiter and the acute toxic goiters; characterized by degeneration of the gland and cardiac decompensation with pathological evidence of its presence in cardiac degeneration and not in the pathology of the gland itself. Thus, Hertzler places all goiter heart cases under this classification with the normal end result in cardiac death.

The pathology of the non-toxic diffuse goiter consists, grossly of a gland which is smooth, uniform in contour and consistency, pale and on cross section presents a picture similar to a normal gland with fibrous sept dividing it. The large acini are visible to the naked eye and are filled with a clear colloid. Microscopically, the acinal epithelium is flat or low cuboidal forming various sized acini containing an abundance of pink staining colloid.

The symptoms produced by the non-toxic diffuse goiter are not marked in their onset, usually the size alone is the earliest manifestation noted. Then, as the patient enters her teens she may show nervous, neurotic tendencies with a dysmenorrhea which may persist for years, without any change in the gland itself. Iodine and sedative medication in

these early types usually tends to regression of the goiter and symptoms, however, those that continue to enlarge become surgical as they merge into the exophthalmic types or into the bosselated type from which regression is not possible. We have all seen the long asthenic patient complaining of everything under the sun, with a small smooth goiter; he or she goes from one doctor to another for relief, these types apparently do not respond to medication nor surgery and it is a surgical mistake to operate these cases as they will haunt your office thereafter wanting to know why they are not completely well. I always like to classify this type as an interstitial type of goiter, feeling that although it is smooth, uniform and small it derives a certain amount of metabolic disturbance from an interstitial change of hyperplasia of interstitial cells.

The pathology of the non-toxic nodular goiter consists clinically of a palpable, movable, firm, elastic, bosselated gland. The nodulations will be present pathologically on removal of the goiter, while not palpable clinically. These bosselations are produced by hyperplasia and as stated before this process usually takes place in all smooth goiters by the time the patient reaches the age of twenty-five years. The pathogenesis of this type of goiter is believed to be gradually progressive from a simple diffuse non-toxic to a nodular non-toxic and finally to a nodular toxic state. However, even in this stage of so-called non-toxicity, the patient complains of nervousness and we find her pulse elevated but

we usually disregard this and pay no attention to the goiter only fifteen years later to see this patient return with definite toxicity present of a degenerative nature. Therefore, can we ever say a nodular goiter is non-toxic, I believe yes in so far as just at the time clinically examined, but no in so far as we consider its hidden pathology and pathogenesis. If hyperplasia of the acini develops, then we have an acute toxic goiter. Clinically this type is often seen as a large protruding goiter, however, toxicity cannot be gauged by size as the large lobulations are often cystic and present an atrophic structure. It is in this type however, that acute hemorrhages sometimes occur with sudden choking spells and rapid increase in size of the neck, which necessitates immediate surgery.

The cross section view of a nodular goiter depends again on its age, the older it becomes it loses its translucent nature and becomes more reddish in color due to increase in hyperplasia of cell structure. The fibrous tissue septa are firm and increased in amount giving the gland an appearance of being divided into lobes. The acini may be large and visible to the naked eye and even cystic or if hyperplasia is more pronounced the acini may be hard to see and the structure correspondingly more firm.

The microscopic picture in the nodular non-toxic is characterized by the beginning of the formation of new acini between old ones or in the walls of old ones with dilation and cystic degeneration and

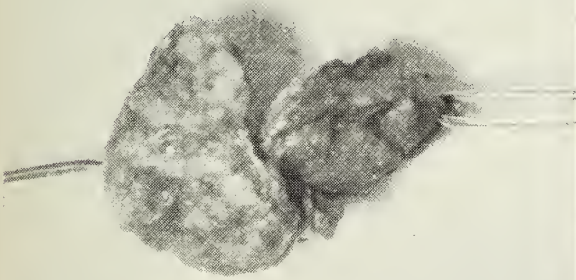


FIG. 4A

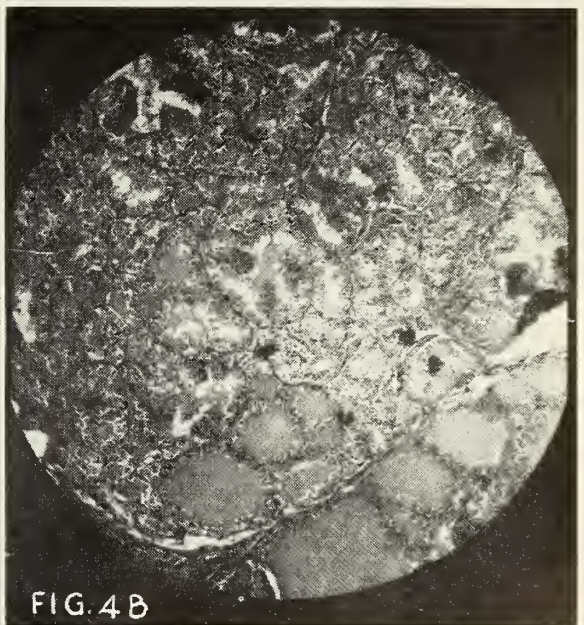


FIG. 4B

FIG. IV. TOXIC DIFFUSE GOITER.

A. Gross pathology presents a hard gland with edematous capsule, gland is friable, bleeds freely on removal.

B. Microscopic pathology showing papillary hyperplasia, crenated colloid, cellular hypertrophy and hyperplasia, formation of new acini.



FIG. 5 A



FIG. 5 B

FIG. V. FOETAL ADENOMA

A. Grossly presents a round encapsulated tumor protruding from normal gland tissue.

B. Cross section showing definite thick capsule with hemorrhagic cystic area in center of adenoma nodule.

C. Microscopically typical foetal type acini without colloid or lumen.

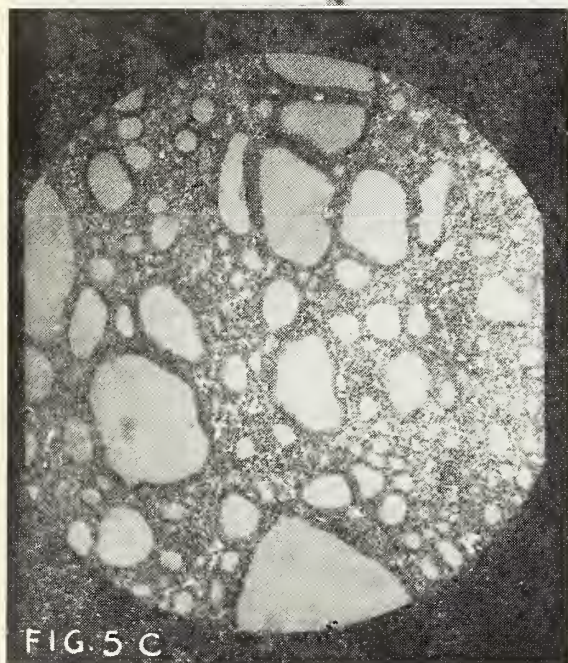


FIG. 5 C

often compression of old acini resulting in nodulation. Degeneration of colloid is noted by it taking a more blue stain over the eosin stain of the new formed acini. Cellular activity in the non-toxic state is not evident as it is in the later toxic state.

The toxic nodular goiter as previously stated is the simple nodular goiter, which is undergoing degeneration resulting in cardiac disturbances, which may or may not be recognized until the cardiac disturbance appears. This condition is the most common type of toxic thyroid seen and is an entirely different pathological goiter from the acute toxic goiter which is characterized by hyperplasia

and clinically by thyrotoxicosis as opposed to a degenerative cardiac disturbance in the nodular toxic goiter. However, an acute exophthalmic goiter may be super-imposed upon a degenerative toxic goiter. Pathologically the toxic nodular goiter is firmer to palpation than the non-toxic, is more fixed in the neck tissue and somewhat tender to manipulation. On removal the capsule is more or less adherent to the surrounding structures, the blood vessels are larger and the gland has a definite increase in red color over the more translucent non-toxic goiter. On cross section the nodulations are very distinct with marked fibrous tissue septa, hemorrhagic and cystic areas are very common and occasionally in the aged, calcified areas are found. Histologically the first evidence of toxicity in the nodular goiter is degeneration of the colloid evidenced by the colloid appearing granular, vacuolated and staining with basic dye; this all occurring in the absence of cell hyperplasia, in fact there is marked cell atrophy and degeneration.

Treatment for this type of goiter is universally surgical, treatment result depending upon the degree of cardiac involvement. In the early stages of cardiac involvement the removal of the cardiac irritant results in a complete satisfactory cure. However, later as permanent heart involvement and degeneration has occurred the removal of the goiter only stops further toxicity but the cardiac damage is permanent and will progress to a final cardiac death

even if there is no more toxic reaction from the thyroid. It is believed by some, that the nodular toxic goiter should be totally removed as the portion left in the usual subtotal thyroidectomies is enough often times to complete a cardiotoxic state and end years later in a cardiac death, although clinically the patient has been relieved of his goiter.

The acute diffuse toxic goiter is to be definitely defined from the chronic toxic or nodular toxic goiter; as likewise is the term exophthalmic goiter and Basedow's disease which are synonymous and refer to the acute diffuse toxic type; while the term Grave's disease includes the chronic nodular which have suddenly become toxic, thus having a secondary super-imposed acute toxic state. This type, the secondary acute toxic usually occurs in older individuals as it springs from an old nodular goiter base. Therefore, the acute toxic diffuse goiter refers to those goiters which have arisen rapidly in the younger individual from either a pre-existing simple colloid goiter or even a normal thyroid gland due to hyperplasia of the epithelial cells due to some unknown factor which results grossly in a diffuse bilateral, smooth, firm, slightly tender goiter producing toxic symptoms of nervousness, palpitation, tachycardia, loss of weight, tremor and in ten per cent of the individuals, exophthalmos. The secondary toxic type is less typical in clinical symptoms and likewise more damaging as it occurs in the older individual whose heart has already been damaged by a chronic nodular goiter. The acute toxic goiter produces tachycardia even to tremendous degrees but rarely results in heart failure; those resulting in heart failure are usually only those who have had trouble over a period of years, who have gone through one or two attacks with "burning out" of the toxicity. Likewise it is interesting to note, that a single lobectomy will produce a great improvement in the patient and even an apparent cure for even two to three years. When at that time the second lobe is removed and examined microscopically it will present the same hyperplasia as the first lobe. Therefore one is prone to wonder, the improvement must have been in the chemistry of the colloid and not in the cellular hyperplasia. When regression does occur spontaneously it is evidenced microscopically by a degeneration of the colloid and years later the patient dies a cardio-toxic death, the same as produced by a chronic nodular goiter with degenerative changes. Therefore one is led to feel that the cardio-toxic state is brought about by the product of degeneration alone and the hyperplasia only results in cardiac stimulation.

If papillation is present there are eye signs, also the converse is true. These eye signs may be slow to develop but are true to type and manner of onset.

As a rule the fixed gaze is first noticed, then the widening of the palpebral fissure and delayed winking and finally definite exophthalmos. Regression of eye signs is rapid in those operated early. Those not operated but allowed to "burn out" will retain the eye signs though other signs of toxicity clinically have disappeared.

The gross pathology of the toxic diffuse goiter is that usually of a small or medium sized goiter as it develops rapidly and toxicity manifests itself before extreme enlargement has taken place. The gland is therefore usually smooth or granular on the surface with a diffuse bilateral enlargement. Due to the hyperplasia present, the gland is firm to pressure. On cross section the colloid follicles are small, the gland appears very cellular and firm. Whitish areas and dots of firm hyperplasia of acinal epithelium are plainly visible to the naked eye. Cystic degeneration, hemorrhage and nodulation are only present in old burned out glands or in the old toxic nodulars on which a secondary acute toxic process has been super-imposed. Therefore the picture varies in the young individual from a nearly normal colloid goiter which has become more firm and in which are only a few firm, white cellular areas of hyperplasia to glands in the older individual which have only localized areas of hyperplasia.

The histological picture of the acute toxic goiter is very typical and here two definite groups are present. First those glands in which papillation of epithelial cells into the lumen of the acini is present and second, those glands in which papillation is not present. In the first, it can be said that exophthalmos is present in the patient and in the second that exophthalmos is not present. In other words exophthalmos is always associated with the microscopic findings of papillation of acinal epithelium. The next feature looked for and found in the acute toxic goiter slide is the change in the colloid which is evidenced by granulation, vacuolation and basophilic staining of the colloid. It must always be kept in mind that the usual acute toxic goiter has started from a nearly normal gland and that there will be microscopic areas of nearly normal thyroid gland present so the microscopic study must be from several areas throughout the gland and not from only one localized area or the true picture with papillary formation, colloid change, etc., may be missed. The third characteristic feature of the acute toxic goiter is the formation of new acini which are usually small and free of colloid. If the toxicity is severe there will be even solid masses of cells with deep staining nuclei and pale protoplasm. Round cell infiltration and areas of hemorrhage denote severe toxicity. Acinal epithelium is hypertrophied as well as hyperplastic. In severe toxic cases the acinal epithelium

may show degeneration and even exfoliation, this as a rule noting that an abrupt end for the patient is likely.

The treatment and prognosis of this group of goiters is perhaps one of the most particular, from pre-operative and operative care, of any surgery done and also one of the most dramatic in results to the patient and satisfaction to the surgeon. Proper pre-operative care with rest, sedatives and Lugol's solution will not only place the patient ready for surgery but also make a very difficult piece of surgery a fairly easy one, attended with little risk if cardiac damage has not already been produced. The patient's symptoms will subside with proper pre-operative care but haste here should be stayed as the goiter itself may not be ready. In fact, the gland should not be considered ready until the connective tissue reaction of its capsule has subsided and it becomes more freely movable from the surrounding neck structures. If operated too early, bleeding will be profuse from the many friable capsular vessels and the surgical capsular dissection will be difficult. Friability of the connective tissue and also the gland itself is greatly lessened with a long enough pre-operative medication with Lugol's solution. In fact, the prognosis and mortality rate is more closely governed by the surgical judgment of when to operate than any other single factor. The amount of gland to be removed should be governed by clinical experience and not by any hard and fast rule; but I believe as time goes on we are becoming more prone to remove more and more gland, as the part that is left is also diseased. It is questionable as to how much normal function the remaining tissue carries on. The possible production of myxedema does occur once in awhile but its satisfactory treatment with thyroid extract even over a period of years still leave a very grateful patient for the removal of her goiter. According to Hertzler, it is doubtful if the myxedema is due to the removal of too much gland; he would rather feel that it is a coexistent state of a hypo and hyper state and that the hypo state was present in a mild state prior to surgery. In other words surgery did not produce the myxedema, as it is a disease of the thyroid gland and not a lack produced by surgery. Be this as it may, we do know that iodine and thyroid extract relieve the symptoms of myxedema and often spontaneous cure results.

The foetal adenoma should not really be considered a goiter as it is a tumor pure and simple of congenital origin. It may arise from an otherwise normal gland or from a colloid goiter with which it has no connecting relationship. As the foetal adenoma enlarges it produces pressure symptoms and even degenerates similar to the toxic nodular

producing cardio-toxic states. Malignant change is frequent enough that all foetal adenomas should be removed as a prophylactic if for no other reason. The toxicity of the foetal adenoma is slow in onset much more so than that from the toxic nodular goiters and not so severe, yet it will as surely result in a cardio-toxic state if not removed. The toxic symptoms are progressive and not subject to remissions and relapses. Exophthalmos as a secondary acute toxic state never occurs in a foetal adenoma, in other words papillation never occurs; if exophthalmos is present it is due to papillation outside of the foetal adenoma in the remaining thyroid structure.

The gross pathology of the foetal adenoma is quite characteristic and should never be confused with a nodular goiter, as it is a round, discrete tumor usually protruding from the rest of the gland. The capsule is very heavy and firm, so much so that the adenoma may be shelled out from the rest of the gland. On cross section, the fibrous capsule is as a shell about the gland structure which is made up of very small acini with very little colloid. The earliest secondary change is the production of a fibrous tissue core of stellate shape. Heavy walled cystic areas are frequent degenerative changes as well as areas of hemorrhage. Eighty per cent of all thyroid malignancy arise from foetal adenomas; so for this reason alone all foetal adenomas should be removed.

Histologically, the foetal adenoma presents a typical picture of very small immature acini containing little if any colloid, in areas the cells will have grown in columns without any semblance to acini formation. Next the capsule is very important as differentiation from the capsule of the nodular goiters which is made up of compressed acini and fibrous tissue. The capsule of the foetal adenoma does not contain compressed acini of normal or degenerated thyroid tissue but is a purely fibrous tissue structure of a thick firm growth.

The foetal adenoma may become microscopically malignant with lawless growth of cells all remaining intra-capsular and clinically benign, for a period of time before it finds its way through the capsule and becomes a definite malignancy. Histologic findings of hemorrhage, desquamation and liquefaction is often present in one area while other areas may show normal foetal adenoma structure and yet others a tendency to columnar formation and even malignant change.

SUMMARY

1. The classification of colloid goiters is only relative in that it notes only the stage of the pathological process present at the time of examination.
2. The type of goiter present in the colloid family depends upon the age of the goiter.

3. Toxicity produced in the nodular goiter is a degenerative end stage always resulting in a cardio-toxic state.

4. The simple colloid goiter is the only type that will under-go remission and this before the age of twenty-five.

5. All colloid goiters after the age of twenty-five become nodular and progressive.

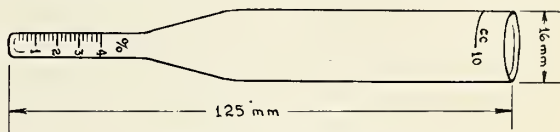
6. The acute toxic goiters arise rapidly from an apparently normal gland and are characterized by hyperplasia with increased secretion of the gland with resulting toxicity.

7. Removal of acute toxic goiters gives gratifying results both to patient and surgeon.

8. Foetal adenomas are in reality tumors arising from foetal rest cells and are only of importance from secondary degeneration, or excessive size or a terminal malignant change.

be found only approximate — too inaccurate to be practical.

A white blood cell count is carried out by making a one in twenty dilution of blood in a one per cent acetic acid solution; this hemolyzes the red cells and dilutes the concentration of white cells. The white cells then may be counted in a chamber of known volume, and the number of cells per unit volume of blood may thereby be computed. We have found it possible to centrifuge the diluted hemolyzed blood in a special small-tipped centrifuge tube; the cells are thrown down into the narrow calibrated tip, and



Sketch of a Leucocrit Tube.

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A METHOD TO DETERMINE PACKED WHITE CELL VOLUME OF BLOOD

Ira R. Morrison, M.D.

Atchison, Kansas

Centuries ago, it was known that if clotted blood were allowed to stand for several hours, a thin white layer formed over the surface of the clot. This layer, the "Crusta Inflammatoria," was usually more obvious in the blood of diseased individuals and therefore was considered harmful. Patients were subjected to "blood letting" to remove some of this supposedly harmful substance, which we now know to be a layer of white blood cells. A count of the number of white cells per unit volume of blood has long been a routine blood test, however, the author has not found in the literature a description of an accurate technic for measuring the per cent volume of packed white cells.

The percentage of packed white cell volume may be determined by measuring the buffy coat either in a tube of centrifuged blood, or in a tube of rapidly sedimenting blood that has stood for several hours, but inasmuch as many of the leucocytes will be dispersed throughout the red cells, these methods will

the per cent volume of leucocytes in the blood thus is easily determined. To the packed white cell volume we have given the name "Leucocrit." The leucocrit tube* is of glass one mm. in thickness; it is 125 mm. in length, the inside diameter is fourteen mm. in the large upper part and 1.25 mm. in the calibrated tip.

The technic of the test is as follows: Five cubic centimeters of blood, secured by venapuncture, are injected directly into a four ounce medicine bottle containing ninety-five c.c. of three-eighths per cent acetic acid and shaken a few times. Ten cubic centimeters of the mixture are placed into each of two leucocrit tubes and are centrifuged at about 1750 rpm. for five minutes. The volume of white cells packed at the calibrated stem of the tube then is read off as the percentage of leucocyte volume of whole blood. The reading is facilitated by holding the tube against a background of any good light source such as a window or an electric light, an eye-piece is not necessary.

Any amount of blood may be used provided the ratio of blood to acid remains the same. We use five cubic centimeters of blood because we find it rather inaccurate to measure smaller quantities directly from the syringe. One cubic centimeter of blood may be used, if desired, in which case the one cubic centimeter of blood drawn into a one or two cubic centimeter syringe is injected into nineteen c.c. of the acid solution. We choose to use more blood and solution in order to allow for some waste and spill and for a recheck if necessary. We find that the ease of handling compensates for the few extra cubic centimeter of blood loss and the extra amount of hemolyzing solution, which costs only six cents a gallon. Whether giving intravenous

*Steinlite Laboratories, Atchison, Kansas.

medication, or drawing venous blood for other blood tests, one may conveniently withdraw an additional five cubic centimeters for the leucocrit.

One-half cubic centimeter of blood content is present in the ten cubic centimeters of mixture in the centrifuge tube. Therefore each .005 c.c. of white cells in the bottom of the tube represents one per cent of the blood volume and is so indicated on the tube. Each one per cent is subdivided five times by short transverse lines which indicate .2 per cent of the whole blood volume.

After centrifuging, there may be a very small amount of a brown transparent cloudy layer just above the packed white cells. This is caused by incomplete stromolysis of some of the erythrocytes. This layer will be more prominent if centrifuging is prolonged; however, it does not interfere with the reading and may be disregarded.

The three-eighths per cent acetic acid solution hemolyzes the erythrocytes and helps to prevent clotting. Stronger acid cause the solution and the leucocytes to assume a deep brown color.

The degree of centrifuging necessary will vary with the individual centrifuge machine. Two criteria of completeness of centrifuging are; the absence of white cells in the fluid upon microscopic examination, and no increase in the leucocrit upon further centrifuging.

We avoid the use of anticoagulants because they retard stromolysis; citrate, oxalate, heparin, and liquid have been tried. The latter two have proved fairly satisfactory, but with certain blood samples they also retard stromolysis, to a slight extent, and thereby interfere with the test.

Clean glass-ware is imperative throughout. Our cleaning instrument for flushing the narrow tips of the centrifuge tubes is a spinal needle on a two cubic centimeter syringe.

The chief value of the test lies in its simplicity and in the fact that it avoids the possible sources of error of microscopic technic, especially in the hands of the untrained. The difference in size of the various types of white cells (six to twenty microns in diameter) makes it difficult to check accurately a white cell count by the leucocrit. Corresponding numbers of monocytes and small lymphocytes would occupy dissimilar volumes. The leucocrit serves as a check on both the white cell count and the differential white cell count when considered together. It might well be used for every complete hematological workup, serving to verify and enhance, but not to replace, the white cell count and the differential count. As is true of almost any new laboratory test, several trials may be required before the technic is satisfactorily mastered. The procedure

will then require but little time, yet give dependable results.

In our series of 100 cases we have found the normal packed white cell volume to range from one-half to one per cent. One individual with a 7,200 white blood cell count and a .8 per cent leucocrit showed during an attack of acute appendicitis a white blood cell count of 19,500 and a leucocrit of four per cent. The greater relative increase in the leucocrit being due to the leucocytosis and to the relative increase in neutrophils which are large cells. On the other hand chronic inflammatory processes with normal white blood cell count but a large number of small lymphocytes give low leucocrit readings.

SUMMARY

We present a technic to ascertain the percentage of white cell volume in blood by centrifuging hemolyzed blood. It is not within the scope of this preliminary paper to describe the white cell volume changes found in pathological bloods.

TUMORS OF PLEURA AND PERITONEUM ANATOMO-HISTOLOGICAL STUDY*

SUMMARY

M. Gerundo**

Topeka, Kansas

The tumors of the pleura and peritoneum have given rise to numerous studies and theories, many of them conflicting with each other. In this paper have been reported three cases of pleural and two cases of peritoneal tumors, the histological study of which has been carried out.

Case I—This man was injured in an automobile accident and received a fracture of two ribs. He was admitted to the hospital and at that time the x-rays revealed nothing beside the fracture of the ribs in the left side. A few days later pain and fluid in the chest developed. For several months the fluid continued to form and was aspirated several times. The patient went gradually downhill and the last pleural puncture aspirated only a small amount of blood. He died about seven months from the time of the fracture.

Anatomo-Histological diagnosis: Mesothelioma of the pleura.

Case II—A man of about fifty years of age had received an injury to his left side three years pre-

*For detailed paper order Document 1443 from American Documentation Institute, Offices of Science Service, 2101 Constitution Avenue, Washington, D. C., remitting thirty-five cents for microfilm or \$2.60 for photocopies readable without optical aid.

**Pathologist, State Hospital, Topeka.

viously. Several times fluid was extracted from the left pleural cavity, as well as new fluid was constantly present. He was received in a tubercular sanitarium, with the diagnosis of tuberculous effusion. Bacilli were never found in his sputum and inoculation of the fluid into guinea pigs was negative.

Anatomo-histological diagnosis: Mesothelioma of pleura.

Case III—A woman fifty-five years of age had been sick for the last year or so. No physical findings, except loss of weight and weakness. The pulmonary findings had never been pronounced enough to attract the attention of her physician. She died without a definite diagnosis being made.

Anatomo-histological diagnosis: Mesothelioma of the pleura.

Case IV—A man about sixty-two years of age had been losing weight and having vague gastro-intestinal disturbances and enlargement of the abdomen. Finally he showed signs of obstruction and decided to call a physician. The marked degree of undernourishment was considered a contra-indication to any surgical intervention, inasmuch as a probable carcinoma of the gastro-intestinal tract was suspected. The patient died in the hospital a few days after admission. The peritoneal surface was studded with numerous pinpoint white dots, having the appearance of tubercles.

Anatomo-histological diagnosis: Mesothelioma of the peritoneum.

Case V—A woman seventy-one years of age consulted a physician because of an enlarged mass in the upper abdominal cavity. She had no great discomfort from the mass. An exploratory operation was performed. At the operation a large mass was found in the retroperitoneal cavity, immediately below the inferior margin of the pancreas. The mass was fluctuant and in the maneuver of isolation, ruptured, giving exit to a large amount of bloody fluid and to a soft grayish or hemorrhagic matter, of the consistency of brain tissue. The wall was thick and infiltrated with blood. The tumor was not removed, due to the difficulties of isolation and the advanced age of the patient.

Anatomo-histological diagnosis: Mesothelioma of peritoneum, showing angio-plastic orientation.

COMMENT

The most important work on the development and physiology of the mesothelium is certainly Maximow's contribution. He admitted that the lining elements of the pleura may assume the character of fibroblasts, by modifying their form, without losing, however, their mesothelial character. Schopper, instead, claimed that the serosa lining cells assume sooner a mesenchymal character and are transferred into true fibroblasts.

The extensive literature and theories on the subject are reviewed.

The conception of Fischer-Wasels and Marras of undifferentiated carcinomas of the serosas would seem to be logical, if it were not inspired to the theory of heterotopias and embryonal germs. Although we always speak about a point of origin, truly we do not admit that a neoplasm originates

from the proliferation of adult elements. Every pathologist agrees that such a multiplication or proliferation of adult elements would lead to hyperplasia and that even in such a case, adult elements have little or no mitotic activity. In a work on metaplasia of the cells, Bencini showed that in order to differentiate in some other direction the cells should dedifferentiate. However, where such pictures of dedifferentiation are not very common, the new trend of differentiation comes from undifferentiated elements with evolutive capacities, the so-called cambial cells. In any tissue, which undergoes metaplastic, cataplastic or neoplastic changes, such changes are never present in the adult elements, which have already reached a degree of maturity, but are present in the cambial cells of the same tissue. In such an order of ideas, the conception of Fischer-Wasels is true, because no neoplastic process may come from cells which have or are reaching a certain degree of differentiation but only from cells which are completely undifferentiated. While this is true, and almost accepted by the majority of authors, in discussing the histogenesis of these tumors, we have in mind the natural evolution of the cambial cells present in an organ, where the tumor develops. In speaking of tumors derived from a tissue, we have in mind that the cells in that organ normally have only one evolutive capacity in the direction of the functioning adult cell. To make a comparison, we can compare these cells to gametocyte, which have only one possibility, that is to develop into the adult individual.

There is no tumor, if there is no activity of the tissue and reproduction of new cells. Tumors originate from those elements, which have the predominant physiological role in an organ. In my opinion this is the reason, without completely denying the possibility of connectival tumors in epithelial organs, the epithelial tumors are those more often encountered. It is possible that connectival tumors in epithelial organs are developed only when there is any increase or predominance of granulation tissue, following an infectious or hyperplastic process. In this line of thought, for example, we can explain the rarity of neuroganglioma of the adult brain, because the nervous tissue, although very active, shows no reproductive activities and does not contain any great number of cambial cells, while it may occur more often in children, where the activity and reproduction of cells are at its height.

In the pleura and in the peritoneum, the tumors may be derived from the lining cells, which are the preponderant physiological elements. The lining cells in these locations, have not achieved, however, their highest differentiation, and possibly they have

(Continued on Page 25)

President's Page

To the Members of The Kansas Medical Society:

The medical defense program is working out satisfactorily in Kansas. A high percentage of the medical questionnaires sent to 2060 Kansas physicians has been returned to headquarters properly executed. Examining physicians for local draft boards and members of medical advisory boards are busy culling out those physically unfit for military service. Members of the medical reserve corps are being called to active duty, while others are awaiting orders. As time goes on the defense responsibilities of all doctors of medicine will increase, regardless of our military or civilian status, and our obligation is to hold ourselves in readiness for future service.

The 1941 session of the Kansas Legislature is getting under way. Since February 10, 1859, the members of The Kansas Medical Society have taken more than a passing interest in legislative matters having to do with the health of our people. Legislative enactments are essential in the furtherance of preventive medicine activities, tuberculosis control, medical aspects of workmens compensation laws etc., and as a profession it is our duty to see to it that such enactments are scientifically and economically sound.

The past few years our Society has taken a very active interest in legislative affairs. Our intention is to raise medical standards and never to lower them in Kansas. Our efforts in the past have been definitely committed to this achievement and under no circumstances will we deviate from this policy. If from time to time it becomes necessary to do battle in order to attain this end, the entire membership of our Kansas profession will be found on the firing line for the duration of the war. Fortunately, for the people of Kansas, our legislative bodies are made up of men coming from a hardy stock of Kansas pioneers who have always had the welfare of Kansas people at heart and who don't mind doing battle themselves to preserve Kansas ideals.

Sincerely,

A handwritten signature in cursive script that reads "Loren Loveland M.D." The signature is written in dark ink and is positioned above the printed name of the president.

President, The Kansas Medical Society.

EDITORIAL

BLOOD TRANSFUSION DONORS

To surgeons whose routine work includes blood transfusions the welfare of the donors who are used is perhaps given secondary consideration. The procuring of donors is left to the laboratory service in many hospitals. Because of this the responsibility of the surgeons to donors may be forgotten. The result is that donors are often used without a general physical examination. Some donors are used who are beyond the age group best suited for giving blood. Others may have hypertension or other systemic disease which would exclude them if they were carefully scrutinized by examination. The results of using donors who are selected only on the basis of the suitability of their blood is not only unnecessary and unscientific, but it may be exceedingly harmful to the donors.

In a recent article on the "Neuropsychiatric Complications Following Severe Loss of Blood," by Dr. Norman Reider, of Los Angeles, a former member of The Kansas Medical Society, published in the *Archives of Neurology and Psychiatry*,* this author points out that there are well defined clinical syndromes due to the sudden loss of blood, such as venesection, hemoptysis, hematemesis, urinary and rectal bleeding, gun shot wounds, etc. "The most frequently encountered neurologic sequel is hemiplegia, occurring not only in older persons with arteriosclerosis or hypertension . . . but also in younger persons with no evidence of vascular disease."

There is good reason to include blood transfusion donors among individuals who undergo sudden loss of blood and to remember that they are subject to the neurological manifestations to which Dr. Reider calls attention in his excellent article.

It may be assumed that blood donors constitute a rather healthy group, yet there are deaths reported in the literature following the taking of blood for transfusion. A study of the frequency of accidents,

deaths and neurological manifestation occurring in connection with the withdrawal of blood for transfusion should be productive of some valuable data for the consideration of those interested in blood transfusion.

ANOTHER YEAR

Publications which continue thru numerous years are confronted with an interesting problem. If changes in format and arrangement are not frequently made the publication soon finds itself operating in a stereotyped and monotonous manner and with a format which is obsolete and not in keeping with progress. The Journal attempts therefore to make changes in format and style from time to time. The current issue is an illustration. A new arrangement of the cover has been added, the cover stock and interior stock are the heaviest the Journal has ever used and represent in quality one of the best grades of paper which can be purchased. The width of the publication has been slightly decreased for better balance of margins and for complete standardization of size with other medical publications.

Two thousand copies of the Journal were published each month during 1940 and were forwarded to members, subscribers, libraries, exchanges and other sources in every state in the Union and various foreign countries.

The Editorial Board is particularly anxious that the Journal shall include all possible original Kansas material and all other scientific and professional information in which the Kansas profession is interested. It appreciates receiving contributions of scientific articles and it also appreciates receiving information concerning county medical society activities and other information of professional interest. The Journal desires to express its thanks to those members who forwarded contributions during 1940 and to those who will do so in 1941. The efficiency of the Journal is dependent upon the adequacy, the newness and the completeness of the material it publishes. The Editorial Board greatly desires to have your criticism, suggestions and help toward these ends.

(* *Archives of Neurology and Psychiatry* November 1940.)

EYE, EAR, NOSE & THROAT

THE INTER-RELATIONSHIP OF OPHTHALMOLOGY AND NEURO-PSYCHIATRY*

Lyle S. Powell, M.D.

Lawrence, Kansas

Herschel S. Smith, M.D.

Osawatomie, Kansas

One who works with psychotic patients is immediately impressed by the relatively large amount of eye pathology seen. From this observation one easily deducts that there is a close association between eye disease and mental disorders. In large number of cases the eye pathology is secondary to central nervous system damage, while in a certain number of cases the eye disease is undoubtedly a definite etiological factor in the production of psychoses.

EYE EXAMINATION

Bearing the above facts in mind the following routine eye examination is made on all patients entering the Osawatomie State Hospital, in so far as the patient is able to cooperate with the examiner.

1. Visual acuity—each eye; near and far; accommodation.
2. Fissure—exophthalmos, enophthalmos, ptosis.
3. Lids—movement, defects, masses, swelling.
4. Conjunctiva—inflammations, scars, masses, edema, foreign bodies, secretions.
5. Cornea—inflammations, sensitivity, opacities, malformations.
6. Pupils—size, shape, equality, reactivity to: a. light, b. accommodation, c. pain, d. suggestion.
7. Extrinsic muscles—phorias, trophias, and paralysis.
8. Anterior chamber—depth, foreign bodies in aqueous, tension.
9. Lens—opacities, position.
10. Vitreous—opacities (congenital or acquired).
11. Fundi—(examination done after cycloplegia or mydriasis.) a. Optic disc—shape, size, optic atrophy, optic neuritis, choked disc, cupping, myopic crescent. b. Macula—retinal lesion, color. c. Retina—vascular abnormalities, hemorrhages, exudates, pigimentary deposits, retinal detachment, tumors. d. Ves-

sels—artery-vein ratio, reflexes, tortuosity, notching, differences in calibre.

12. Retinoscopy and refraction under cycloplegia.

13. Refraction without cycloplegia.

14. Visual field examination if indicated—perimeter and Bjerrum screen.

From reviewing the records of 430 patients who were admitted during 1938 and 1939 it was found that only twenty-nine per cent had normal vision and were free from any gross eye pathology. The accompanying table indicates the relative proportion of the types of eye pathology found in these patients.

CLASSIFICATION OF THE PATIENT

The eye examination is a valuable adjunct in making a diagnosis of the mental condition. Syphilis, arteriosclerosis, brain tumors, and other diseases producing psychosis, all have rather characteristic eye findings.

Syphilis of the central nervous system seldom fails to involve the ocular mechanism. Ptosis, extrinsic muscular paralysis, pupillary irregularities, reduction of accommodative power, old chorioretinitis, and optic atrophy either primary or secondary, are all frequent findings.

Sclerosis of the vascular system can be demonstrated in a striking fashion through the fundoscopic examination. The blood vessels of the eye can be observed in their normal living condition. Since the retinal blood vessels closely resemble the intra cranial vessels, one is justified in assuming that changes in the retinal vessels are similar to those found in the brain.

Brain tumors do not always show eye changes in the early stage. However, this is not the rule. Choked disc is usually seen a few weeks before there is any noticeable decrease in visual acuity. Even before the choking of the disc there are frequently changes in the visual fields, and by this method frequently the tumor may be localized with a great amount of accuracy.

CO-INCIDENTAL EYE DISEASE

Eye disease as a co-incidental finding in the psychotic patient is probably a greater factor in the etiology of functional psychosis than is commonly supposed. Squint is a good example of such a condition. Since most of these conditions are congenital, the child is very early in life segregated and pointed out as being deficient by his playmates. As the patient grows older he must make adjustments for this defect in his social life. Some adjust well, others poorly.

When senility approaches, new eye problems arise. When the lens becomes clouded and vision is reduced the patient is faced with a new problem of

*From the Department of Ophthalmology, Osawatomie State Hospital, Osawatomie, Kansas.

adjustment. Some persons adjust well but others find the cataract a convenient curtain by which they can screen themselves out from the rest of the world, and live a life apart from society.

Presbyopia, even to the perfectly normal individual, is frequently a cause of great concern. The recession of the near point, may represent the recession of youth with all its hopes and dreams. And even after glasses are fitted, the patient may be constantly remained of his agedness every time the line of vision is shifted to the lower bi-focal portion of his glass.

The eye examination often furnishes a means by which medication can be safely given to patients. This is especially true in diabetes, arteriosclerosis, kidney disorders, many blood dyscrasias, metabolic disturbances and syphilis.

Of a special value is the eye examination in Tryparsamide therapy. Tryparsamide has undoubted value in the treatment of central nervous system syphilis but may be most dangerous if given without control. Although some kinds of blindness occur immediately following the first injection there is usually a gradual loss of peripheral vision in cases where the drug is not well tolerated. In this institution an eye examination including field studies precedes each injection of the drug. This precautionary measure has resulted in its withdrawal in several cases. By proceeding carefully in this manner in only a few cases has the peripheral vision failed to return to its original amount following the withdrawal of the Tryparsamide.

TOTAL NUMBER OF PATIENTS 430

Type of Disease	Incidence Number	Percentage
Decrease in vision: 20/20 to 20/50.....	155	36
20/50 to 20/200.....	56	13
20/200 to L.P.....	32	7
Light perception	10	3
Corneal opacities interfering with vision....	17	4
Pupillary pathology	39	9
Manifest muscle anomalies	13	3
Lens opacities	66	15
Vitreous opacities	23	5
Fundus pathology: optic atrophy	23	5
chorio-retinitis	67	15
optic neuritis	2	0.5
marked arteriosclerosis	9	2
No pathology. Normal vision.....	123	29

The chart shows the relative proportion of eye diseases as found in the psychotic patient, as determined from the above 430 cases.

Practically all tuberculous individuals are Vitamin A deficient, whether as a cause of tuberculosis or an effect is not known. Marked Vitamin A deficiency might indicate that a thorough chest examination is in order if no other cause be found for this deficiency. Vitamin A deficiency is believed to be widespread. R. Harris and J. Harter, *Southern Med. Jour.*, Oct., 1940.

CANCER CONTROL

TUMORS OF THE URINARY BLADDER

H. F. O'Donnell, M.D.

Wichita, Kansas

According to an average of statistics, tumors of the urinary bladder represent approximately 0.4 per cent of all human tumors. However, of all patients presenting themselves with urological symptoms, bladder tumors comprise about four per cent of all total number. This condition occurs more frequently in the male, the proportion running about four to one. They are most common in the sixth decade. Very little is known concerning the etiology of bladder tumors. That chemical irritation does play a part in the causation of certain bladder tumors cannot be doubted. Simon collected eighty-one cases in aniline dye workers.

Pathologically, the more common tumors of the bladder range from the benign papilloma to the infiltrating carcinoma. More rare are sarcoma, endometrioma, and chorio-epithelioma. Carcinoma of the bladder metastasizes late, often running a course of several years before this occurs. Even when they do metastasize, few are suspected clinically since the retroperitoneal lymphatics are first involved, and these are rarely palpable. Rarely more widespread metastases to bones, lungs, liver, or peritoneum occur.

The outstanding symptom of bladder neoplasms is painless hematuria. Dysuria may occur, especially after infection. Infiltrating tumors, near the ureteral orifices, commonly cause obstruction of the upper urinary tract, and symptoms suggesting renal pathology. In neglected cases, the frequency and pain on urination may become unbearable and the patients become anemic, cachectic, and uremic, presenting a picture of chronic carcinosis and sepsis.

When a patient passes bloody urine, or when there is unexplained frequency or dysuria, one should think of the possibility of bladder tumor. Hematuria is always a serious symptom, and demands thorough investigation. The fact that it may subside temporarily is no excuse for delaying examination. A careful cystoscopy will always reveal the presence of a neoplasm, except in rare instances when they occur in diverticulae. A fair idea of the type of tumor may be had from the cystoscopic examination.

Pneumocystography is of great value, particularly in determining the degree of infiltration of the bladder wall. This information is of extreme importance in prognosis, as the less infiltration the better the response to therapy. Also, this is a help to the roentgenologist in planning deep x-ray therapy.

In malignancies of the bladder, as elsewhere, we should attempt to choose the treatment that will give the best curative results with the least risk of life to the patient, and with the least suffering and inconvenience. Treatment must be varied according to the location, size, and degree of malignancy and infiltration. The different methods may be briefly outlined as follows:

1. Cystoscopic treatment—benign papillomata and papillary carcinomata of low grades of malignancy may be successfully treated by fulguration or resection of the tumor. Radon seeds may be combined with the above, or may be used alone in some cases.

2. In some cases, because of the size and location of the tumor, or because of obstructive lesions interfering with cystoscopy, suprapubic operation may be preferable. By this route, fulguration or radium therapy may be applied or the growth may be excised along with a margin of normal bladder wall.

3. More radical surgery consists of transplantation of the ureters, usually to the sigmoid, followed by total cystectomy. This procedure is being carried out more frequently in the larger surgical clinics, but, in spite of improved technique, still carries a discouraging mortality rate.

4. Results from x-ray therapy has apparently been improved by the use of the protracted, divided dose method, first suggested by Ferguson in 1936. More recently, a new method of contact therapy, by the use of a tube inserted through a cystotomy wound, offers the possibility of direct irradiation to the tumor. This method has been used too short of a time to give any statistical date, but it offers promise. Probably inoperable tumors deserve irradiation if feasible, and irradiation may be combined with cystoscopic or surgical methods in operable cases.

In conclusion, it may be said that our best prospect for better results must come from early diagnosis, which means complete urological investigation of all patients with hematuria without delay. Early diagnosis will enable us to obtain better results with the therapeutic measures now at our command.

"In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner."—Sir William Osler.

TUBERCULOSIS CONTROL

TUBERCULOSIS AND MILITARY SERVICE*

Ramsay Spillman, M.D.

The World War is twenty-two years behind us, yet the federal government pays in compensation for tuberculosis that originated in service about \$3,000,000 each month. Analysis of voluminous and complicated federal reports dealing with service-acquired tuberculosis yields the following approximate figures:

Cost of vocational training.....	\$129,000,000.
Insurance	130,000,000.
Compensation	600,000,000.
Hospital Care	100,000,000.
	<hr/>
	\$959,000,000.

The total number of men compensated for tuberculosis in 1922 (it is not feasible, from the annual reports, to run the figures back past 1922) was 36,600. In 1939, the total number was 55,634, including 1,947 deaths for that year.

The cost of taking a man who has tuberculosis into the service cannot be accurately calculated because of many factors that are still unknown and costs that are not apparent, but the author estimates that the figure would be somewhere around \$10,000 per man to date, certainly not less than \$7,500, to which should be added at least \$50 a month for the rest of the man's life and compensation for his dependents after death.

Study of army procedure during the World War leads to the conclusion that the methods employed for the detection of tuberculosis were inadequate. This does not detract from the stature of that distinguished army surgeon, Colonel George E. Bushnell, the advisor to the Surgeon General on all matters pertaining to tuberculosis. It was the consensus of experts in 1917 that adult exogenous infection with tuberculosis is rare, that infection in childhood is well nigh universal and that every infection confers an immunity to anything short of massive doses of bacilli in later life. By the same token, adult tuberculosis was held to result from a reactivation of the antecedent infection. It was thought that for every soldier who had incurred tuberculosis as a result of military service, ten others had brought

*From Tuberculosis Abstracts—The Value of Radiography in Detecting Tuberculosis in Recruits, Ramsay Spillman, M.D., Jour. of Amer. Med. Assn., Vol. 115, No. 16, October 19, 1940.

the disease with them into the army. Present-day experience does not uphold this belief—to cite at random just one of numerous communications, Diehl and Myers prove the development of six cases of tuberculosis in one college fraternity a year after one of its members was found to have a positive sputum, and the development of tuberculosis in a girl several years after her sorority roommate was found to have tuberculosis.

The problem at hand is this: How can the recruit who already has active tuberculosis be recognized, that he may be rejected for the protection of himself and others? Colonel Bushnell trained a large number of highly competent diagnosticians, to whom he imparted the significance of the post-tussal moist rale and the technic of eliciting it. The patient is instructed to cough gently at the end of deep expiration. When he inhales after the cough the rale is heard. The presence of persistent moist rales was the criterion for determining the existence of tuberculosis. Several prominent physicians and radiologists tried to induce the Surgeon General to make the radiograph the decisive factor in the diagnosis of pulmonary tuberculosis. The practical difficulties in the way of the adoption of the radiograph were, however, insuperable, according to Colonel Bushnell, in which conviction he was supported by a special committee of the Council of National Defense which investigated the question. Among the difficulties were the enormous cost of photographing, the impossibility of obtaining a sufficient number of plates (made of glass and most of it imported from Belgium) and the lack of trained radiologists.

Draft boards set up in every community added to the difficulty. These boards included local physicians who were supposed to reject draftees with disqualifying defects. While most draft boards functioned honestly and intelligently there is evidence in official publications that, far from weeding out the manifestly tuberculous, some boards actually concentrated tuberculosis at some of the camps, thinking that they would benefit by change of climate and by army life. In the re-examination of 19,827 men at Camp Kearny, for example, 853 cases of tuberculosis (4.83 per cent) were discovered.

With this background, what should our procedure be in the present situation? Of the available methods for the mass diagnosis of tuberculosis among recruits, physical examination and radiography need to be considered on a basis of relative merits. Evidence of the inadequacy of physical examination to detect tuberculosis is overwhelming. The last word so far as the army was concerned in 1917 was that "the only trustworthy sign of activity of apical tuberculosis is the presence of persistent moist rales." In the light of present-day knowledge this sign is worth

only about 12.5 per cent. In spite of the acknowledged skill of the army examiners of 1917 only about one-eighth of the actually existent clinically significant tuberculosis was detected.

The radiograph should be the criterion in weeding out tuberculosis in today's mobilization. In what form? Fluoroscopy gives no record and is highly subjective. As demonstrated by the experience of a large life insurance company, fluoroscopy in skillful hands may serve as an alternative to a prohibitively expensive routine of roentgenography, but even this company has, since 1936, been making routine roentgenograms of the chest of every applicant for employment.

The paper roentgenogram is speedy and convenient and cheaper than celluloid. Radiologists as a whole do not favor the paper radiogram while tuberculosis workers are enthusiastic over it. If celluloid films were available on rolls like the paper rolls they would undoubtedly be preferred. Paper roentgenograms are vastly preferred to no roentgenograms but celluloid would be preferred if the author were given a choice.

Photography of the fluoroscopic screen is another possibility. But if this method, known as fluorography, is no more than ninety per cent efficient as compared with the standard celluloid roentgenogram, as the author believes, the ten per cent shortage in diagnosis would cost a great deal of money in compensation later. Fluorography is today a highly promising method but awaits further improvements before it can compete with celluloid roentgenograms.

For radiography there are many kinds of apparatus varying in price and capacity. What is most important, however, is the skill and knowledge of the operator.

The author's final conclusion is:

"A normal chest roentgenogram should be the criterion of acceptance in a future mobilization, including the proposed draft for training, and it should be made and reported before the recruit has spent a night away from his own roof to obviate a repetition of the claims for aggravation of pre-existing tuberculosis which occurred during and after the World War."

TUMORS OF PLEURA AND PERITONEUM, ANATOMO-HISTOLOGICAL STUDY

(Continued from Page 18)

more than one evolutive capacity, that is, cambial cells are true mesodermal cells and can differentiate toward mesothelium as toward mesenchyma. However, in the serosas, as well as in the peritoneum and in the pleura, we have to take into account also the preponderant role of the reticulo-endothelial system

and the reticular cells, which have the capacity of transformation into macrophages and other mesenchymal elements. These elements, present in the areolar tissue and representing a different system and function than the surface lining cells, may also have their tumors and their presence should always be taken into consideration, particularly in those tumors, which have more marked connectival characteristics. The cambial cell of these elements will be very near to the cambial cell of the surface lining elements and in reality as an end point it would be necessary to identify these two cambial cells as one single element, that is, a mesodermal cell. Very probably the evolutive capacities of the mesothelium in tissue culture were not those of the adult elements but of the mesodermal cells or central cells included in the culture.

With such a unitary point of view in mind and without attempting to explain their origin from uncertain or hypothetical embryonal germs, we can easily explain the totality of the tumors of the serosa, by admitting their direct origin from a cambial mesodermal cell, normally present and differentiating toward reticulo-endothelial forms on one side (mesenchyma) or toward mesothelial evolution and orientation (mesothelium) on the other. We exclude, however, from such groups, the meningeal tumors, contrary to the view of Geschichter, because we consider them as derivative of the ectoderm.

There are already so many names in the literature that the addition of newer names would be unwarranted. Since the name of mesothelioma has not been given to any other tumor outside the serosa, and to avoid confusion with the tumors derived from more strictly mesenchymal derivatives in other localities, such a name could be preserved, without prejudice to their true derivation from more immature elements of the mesoderma.

(The original article contains ten photomicrographs and thirty-four references.)

Lieutenant Governor C. E. Friend of Lawrence, who appoints the Senate Committees, has announced that the following Senators will serve as members of the Senate Committee on Temperance and Public Health:

Senator W. A. Barron, Phillipsburg, Chairman.
 Senator Robert S. Lemon, Pittsburg, Vice-Chairman.
 Senator J. B. Carter, Wilson.
 Senator Joe R. Beeler, Jewell.
 Senator W. R. Brown, Emmett.
 Senator M. V. B. Van DeMark, Concordia.
 Senator Elmer E. Euwer, Goodland.

The House Committee on Hygiene and Public Health, which will be appointed by Mr. Carper, has not as yet been announced.

The first bill in the House was a proposal introduced by the osteopaths to broaden their rights of practice and to permit them to practice medicine and surgery. The osteopath bill (H. B. No. 1) which was sponsored by Representative D. B. Fordyce, an osteopath of Labette County, is printed below. (The parts shown in italics would represent new additions to the present osteopathic law, the parts shown in parenthesis would represent deletions from the present osteopathic practice act, and the remaining portions are identical with the present law).

AN ACT concerning the practice of osteopathy, providing for educational requirements, examination and licensing of osteopathic physicians and surgeons, amending section 65-1201 of the General Statutes of 1935 and repealing said original section.

Be it enacted by the Legislature of the State of Kansas:

Section 1. Section 65-1201 of the General Statutes of 1935 is hereby amended to read as follows: Sec. 65-1201. Any person not now a (registered) *licensed* osteopathic physician under the laws (in) of this state, before engaging in (the) practice as an *osteopathic physician and surgeon* (of osteopathy) in this state, shall make application to the board of osteopathic examination and registration, on a form prescribed by the board, for a certificate to practice (osteopathy) *as an osteopathic physician and surgeon*, giving (first): (1) His name and age, which shall not be less than twenty-one years, and residence; (2) *evidence of having complied with the pre-professional educational requirements herein specified*; (second) (3) the name of the school or college of osteopathy from which he graduated, which shall have been in good repute as such, at the time of the issuing of his diploma, as determined by the board; (third) (4) the date of his diploma, *and evidence that such diploma was granted on personal attendance and completion of the course of study (of not less than four terms of five months each and such other information as the board may require and sufficient) herein prescribed*; (5) evidence that the applicant is of good moral character, *and such other information as the board may require*; (6) such application shall be accompanied by a fee of twenty-five dollars. (No holder of a diploma issued after June, 1907, shall be admitted to an examination, nor shall a certificate to practice osteopathy be otherwise granted, by said board, to any such applicant unless said) *An applicant for examination shall (have) present evidence of a diploma of graduation from a high school, academy, state normal school, college or university, or a certificate of examination for admission to the freshman class of a reputable (literary or scientific) college, approved by (afore-*

NEWS NOTES

LEGISLATION

The House of Representatives and the Senate choose officers for the 1941 Legislature at party caucuses held on January 13 and announcement was made at the first sessions held on January 14. Mr. Clay Carper of Eureka was elected as speaker of the House and Senator Kirke Dale of Arkansas City as President pro-tem of the Senate. Other officers elected were as follows: Mr. F. L. Hagaman of Kansas City, majority-party floor leader; Mr. Buell Scott of Johnson, speaker pro-tem; and Mr. Frank Kessler of Wichita, minority-party floor leader in the House and Senator Robert Lemon of Pittsburg as minority-party floor leader in the Senate.

said) the board, (as a preliminary education) before taking up the study of osteopathy and (shall have graduated, after personal attendance, from an osteopathic school or college of good repute wherein the course of study shall consist of at least three years of nine months each, in three separate years, and after June, 1915, said applicant shall have a diploma of graduation from a high school, academy, state normal school, college or university, a certificate of examination for admission to the freshman class of a reputable literary or scientific college, approved by the aforesaid) after July 1, 1941, an applicant for examination shall, in addition to the pre-professional educational requirements above set out, present evidence of the completion of at least one year of pre-professional education of a college grade in a college approved by the board before commencing the study of osteopathy. After July 1, 1944, an applicant for examination shall present evidence of having completed at least two years of pre-professional education of a college grade in a college approved by the board before commencing the study of osteopathy (and) An applicant shall (have) produce evidence of having graduated, after personal attendance, from an osteopathic school or college of good repute wherein the course of study shall consist of at least four years of (eight months) *thirty-six weeks* each, in each separate year. (Provided, however, That if any applicant shall have completed a course of study in any such osteopathic school or college, consisting of three years of nine months each, and a post graduate course of at least five months, aggregating at least thirty-two months, such course shall be accepted in lieu of the full period of four years of eight months each provided for in this act). The board shall subject all applicants to a practical examination, as to their qualifications for the practice of osteopathy, in writing, in the subjects of: (1) Anatomy, (2) physiology, (3) physiological chemistry and toxicology, (4) pathology, (5) diagnosis, (6) hygiene (7) obstetrics and gynecology, (8) operative surgery, (9) principles and practice of osteopathy, (10) bacteriology, (11) drug therapy, (12) physiotherapy and such other subjects as the board may require. This may be supplemented by other practical examinations such as the board may by rule determine. If (such) the examination is passed in a manner satisfactory to the board, then the board shall issue to said applicant a certificate granting him the right to practice as an osteopathic physician and surgeon, which shall entitle the grantee of such certificate to practice osteopathy in (the state of Kansas) all of its branches, as taught and practiced in (the legally incorporated) colleges of osteopathy of good repute, including the right to practice operative surgery and obstetrics, and administer antiseptics, anaesthetics, narcotics and biologics: Provided, however, Before any person granted the right to practice as an osteopathic physician and surgeon, shall perform major surgical operations, he shall present evidence to the board of at least two years' service as an intern, or two years' actual experience as an assisting or operating surgeon and receive from the board, if it is otherwise satisfied with his qualifications, a certificate certifying his qualifications to perform major surgical operations. All (examination papers) grades made on examination shall be permanently recorded and examination papers kept by the board for a period of five years. Any person failing to pass (such) the examination may be re-

examined at any regular meeting of the board within one year from the time of such failure, without additional fee: *Provided*, (That a physician's certificate issued by a reputable school of osteopathy to a graduate from a reputable school of medicine after an attendance in an osteopathic school or college of good repute, of not less than two terms of five months each, may be accepted by the board the same as a diploma, and the holder thereof be subject to the same regulations in all other respects as other applicants before the board; Provided, That after the year, 1922, he shall have attended two terms of not less than nine months each in two separate years: Provided, That after they year 1915 he shall have attended three terms of not less than eight months each in three separate years: Provided further, That) *The board is given twenty days notice, in writing.* The board may, in its discretion, dispense with an examination. (in the case,) and issue a certificate granting the right to practice as an osteopathic physician and surgeon, to (first of) an osteopathic physician (duly authorized to practice osteopathy) who presents a legal and valid certificate issued after examination by the legally constituted board (in) of any state (or) territory (or the), District of Columbia (or any foreign country,) or a physician and surgeon who presents a certificate (of license) issued (after an examination) by (a legally constituted board of said state, territory, District of Columbia, or foreign country, accorded) the National Board of Examiners for osteopathic physicians and surgeons, granted only to applicants of equal grade and educational qualifications (with) as those required in this state, at the time such license was issued and who has satisfactorily passed an examination covering the subjects listed herein for examination. The secretary of the board may grant a temporary permit to practice as an osteopathic physician and surgeon valid only until (a) the next regular meeting of the board, or to such time as the board can conveniently meet, to (one whom he considers eligible to practice in the state and who may desire to commence the practice immediately, Such permit shall only be valid until legal action of the board can be taken.) such applicants only whose credentials are approved by the credential committee of the board. The board (may) shall refuse to grant a certificate to any person convicted of a felony, or guilty of gross unprofessional conduct, or who is addicted to any vice to such a degree as to render him unfit to practice as an osteopathic physician and surgeon and may, after due notice and hearing, suspend or revoke such certificate for like cause. Each person holding a legal and valid certificate to practice osteopathy in this state at the time of the passage of this Act shall without further proof be entitled to receive the certificate to practice as an osteopathic physician and surgeon hereinabove described, and to enjoy the rights and privileges herein provided for a person holding such a certificate.

Sec. 2. Section 65-1201 of the General Statutes of 1935 is hereby repealed.

The public health nurse is the advance scout in the business of finding tuberculosis. She, more than any other person in the community, is instrumental in getting contacts examined and active cases under treatment. Crusader, October 1939.

OSTEOPATHS

Judge Clark A. Wallace of the Twenty-fourth Judicial District of Kansas handed down the following opinion in the case of State of Kansas, ex rel., vs. C. V. Moore, now pending in the District Court of Barber County:

The matter now before the Court is plaintiff's motion to strike certain parts of defendant's answer.

The plaintiff has filed its petition seeking the ouster of defendant from the practice of medicine and surgery, alleging that defendant is not licensed under the Board of Medical Registration and Examination to practice medicine and surgery and further alleging certain general and specific acts as constituting such practice.

The defendant by answer admits that he is not so licensed, and that he has committed certain acts complained of by plaintiff. He generally denies all other allegations of the petition, and then alleges that he is, and is duly licensed as, an osteopathic physician under the laws of Kansas, and that the acts done and performed by him were and are authorized by his license to practice as an osteopath.

Plaintiff's motion is to strike from the answer all allegations justifying defendant's conduct because of his learning and license as an osteopath.

To sustain the motion is to hold that the portions of defendant's answer sought to be stricken do not raise or present any issue material or relevant to the relief sought.

I think the motion should be sustained, primarily upon the authority of State ex rel., v. Gleason, 148 Kan. 1.

The defendant contends, however, that there is a general misunderstanding as to what was meant in the opinion of the Gleason case, and submits to this Court the arguments made to the Supreme Court in the case of *Gafney v. Wilson County Hospital*, not yet finally decided. It is said that the *Gafney* case was brought to clarify the situation created by the decision in the Gleason case. In ruling upon this motion, therefore, prior to a decision in the *Gafney* case it may be advisable for this court to more fully state its views:

This action is brought to restrain defendant from the practice of medicine and surgery. G.S. 65-1005 defines the practice of medicine and surgery, in part, as follows:

"Any person shall be regarded as practicing medicine and surgery * * * who shall prescribe, or who shall recommend for a fee, for like use, any drug or medicine, or perform any surgical operation of whatsoever nature for the cure or relief of any wounds, fracture or bodily injury, infirmity or disease of another person, or who shall use the words or letters 'Dr.' 'Doctor,' 'M.D.,' or any other title, in connection with his name, which in any way represents him as engaged in the practice of medicine or surgery."

Plaintiff's petition clearly charges that the defendant is not licensed so to practice medicine and surgery, and the commission of various acts by the defendant constituting such practice.

Does the fact that the defendant is learned as an osteopath and is licensed by the Board of Osteopathic Examination and Registration as provided by G.S. 65-1201 constitute a defense?

Particularly the defendant is charged with practicing medicine and surgery by performing tonsilec-

tomies using surgical instruments and with prescribing and dispensing medicines and recommending drugs as a remedial aid.

In *State v. Johnson*, 84 Kan. 411, osteopathy is defined, and its practice distinguished from the practice of medicine and surgery.

In *State ex rel., v. Eustace* 117 Kan. 746, it was held that a registered osteopath is not entitled to practice optometry. The Court said:

"but the practice of osteopathy, while it may be a part of the art of healing, is not comprehended within the term 'practicing medicine,' nor within the term 'surgical operation,' as used in section 65-1005 of the Revised Statutes."

In *State ex rel., v. Gleason*, supra, it is stated generally that osteopathic physicians in Kansas are not licensed to administer drugs and narcotics and practice drug therapy in so far as drugs are given as remedial aids, and that osteopathic physicians are not licensed to practice surgery if the term extends beyond the manipulation into the general field of operative surgery with surgical instruments.

The United States Circuit Court of Appeals, Tenth Circuit, in the case of *Kansas State Osteopathic Association v. Burke*, felt itself bound by the decision of the Supreme Court of Kansas, in the Gleason case, and held:

"We, are therefore, of the opinion that the statutes of Kansas as construed by the highest court of that State prohibit the use, sale or distribution of narcotic drugs for any purpose by an osteopathic physician."

The Circuit Court of Appeals apparently had no misunderstanding as to what was meant by the opinion in the Gleason case and this Court is much more bound by the decision in the Gleason case than was the federal court.

Furthermore, in *Gafney v. Wilson County Hospital*, 152 Kan. 1, and again by supplemental order made July 6th, 1940, the Supreme Court ordered certain portions of plaintiff's petition stricken, indicative, at least, that the Court had no misunderstanding as to what was meant in the Gleason case, and was adhering to the decisions made therein, particularly with reference to what constitutes the practice of medicine and surgery.

As I view the decisions, the practice of osteopathy is separate and distinct from the practice of medicine and surgery. The purpose for which a license to practice is sought and the authority granted by the license issued appeals to me as having decisive probative effect. While, "an osteopathic school or college of good repute," may give instruction in drug therapy and surgery and other branches pertaining to the care of the body, yet its students, when graduated are osteopaths, not physicians and surgeons. When an osteopath is licensed by the Board of Examination and Registration of Osteopathic Physicians in Kansas, he is licensed only to practice osteopathy, and not medicine and surgery, as that term is defined by G.S. 65-1005. If, within the realm of imagination, suppose that an honor graduate of John Hopkins becomes famous as a physician and surgeon in the Mayo Clinic, then removes to Kansas, takes an examination before the Board of Examination and Registration of Osteopathic Physicians and is licensed thereby. What is his status? Is he any more than the defendant in this case,—a licensed osteopath? Would he be any more

entitled to practice medicine and surgery under the laws of Kansas than is the defendant in this case? I think not.

What is taught in "osteopathic schools of good repute" may be of much concern to the Board of Examination and Registration of Osteopathic Physicians. What is taught in such schools, however, cannot make lawful what the statute (G.S. 65-1006) declares to be unlawful. The issue in this case is whether or no, the defendant is unlawfully practicing medicine and surgery. In the trial, we shall be primarily concerned with G.S. 65-1005, with G.S. 65-1201, very little, if any at all.

The Court is of the opinion that plaintiff's motion to strike should be sustained, except as to paragraph No. 1 of the second defense which might become, upon some phase of the evidence, material. Such will be the order at the next motion day in Medicine Lodge, January 9th, 1941.

An identical opinion was also handed down by Judge Wallace in the similar case, State of Kansas, ex rel., vs. C. R. Muecke, pending in the Pratt County District Court.

ANNUAL MEETING

The Shawnee County Medical Society has announced that the following speakers have already been scheduled for the next Annual Session which will be held in Topeka on May 12-15: Dr. Louis J. Hirschman, proctologist of Detroit, Michigan; Dr. Eugene M. Landis of the University of Virginia, Charlottesville, Virginia; Dr. John A. Toomey, pediatrician, of Cleveland, Ohio; Dr. Albert M. Snell, of the Mayo Clinic, Rochester, Minnesota; Dr. Roger L. J. Kennedy, pediatrician, of the Mayo Clinic, Rochester, Minnesota; Dr. Sumner L. Koch, of Northwestern University, Chicago, Illinois. Dr. T. R. Gittens of Sioux City, Iowa, and Dr. B. Y. Alvis, of Washington University, St. Louis, Missouri, are the speakers scheduled for the Eye, Ear, Nose and Throat Section of the Society meeting who have accepted to date. Other speakers will be announced at a later date.

A new procedure is being advocated this year in that the House of Delegates will meet on Tuesday and Thursday and will not conflict with any of the scientific meetings.

Technical exhibit invitations were forwarded on December 28 to companies approved by the Committee on Technical Exhibits. Acceptances have been received to date from the following concerns:

Gerber Products Company, Fremont, Michigan.
Smith, Kline & French Laboratories, Philadelphia, Pennsylvania.
Riggs Optical Company, Kansas City, Missouri.
The C. V. Mosby Company, St. Louis, Missouri.
M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
Mid-West Surgical Supply Company, Wichita, Kansas.
Parke, Davis & Company, Detroit, Michigan.
Merck & Company, Inc., Rahway, New Jersey.
J. B. Lippincott Company, Philadelphia, Pennsylvania.
E. R. Squibb & Sons, New York, New York.
Borden Company, New York, New York.
Eli Lilly & Company, Indianapolis, Indiana.
Burroughs Wellcome & Co., Inc., New York, New York.
Mead Johnson & Company, Evansville, Indiana.
Petrolagar Laboratories, Inc., Chicago, Illinois.
A. J. Griner Company, Kansas City, Missouri.
John Wyeth & Brothers, Inc., Philadelphia, Pennsylvania.

Wm. S. Merrell Company, Cincinnati, Ohio.
Quinton-Duffens Optical Company, Topeka, Kansas.
C. B. Fleet Company, Inc., Lynchburg, Virginia.
The Medical Protective Company, Fort Wayne, Indiana.
American Hospital Supply Corp., Chicago, Illinois.
Holland-Rantos Company, Inc., New York, New York.
The W. E. Isle Company, Kansas City, Missouri.
The Mennen Company, Newark, New Jersey.
Archer-Taylor Drug Company, Wichita, Kansas.
The DeVilbiss Company, Toledo, Ohio.
General Electric X-Ray Corp., Chicago, Illinois.
McIntosh Electric Corporation, Chicago, Illinois.

The Committee on Scientific Exhibits particularly desires that the scientific exhibit section of the Topeka meeting shall include a large number of presentations by Kansas members. It has written the councilors and the county medical societies requesting that exhibit invitations be extended to all members. Requests for scientific exhibit space should be forwarded to Dr. C. B. Trees of Topeka, chairman of the committee.

NEW LICENSES

The Kansas State Board of Medical Registration and Examination met in regular session in Topeka, on December 10-11, 1940. Licenses were granted to eighteen doctors, twelve by examination and six by reciprocity. The following is the list of those who met the requirements of the Board:

Name	Town
Aldis, John	Osawatomie
Binder, Clifford Frederick	Omaha, Nebraska
Ensign, Paul Roselle	Topeka
Fast, William Spencer	Atchison
Glenn, Lyle George	Protection
Gore, Arthur Francis	Council Bluffs, Iowa
Green, John Dryer	McPherson
Greenwood, Edward David	Topeka
Hanson, John Willard	Manhattan
Herbst, Robert Rudolph	Wichita
Horton, Robert John M.	Manhattan
Jewell, Thomas Clifford	Medicine Lodge
Joss, Charles Stevens	Topeka
Miller, Joseph Edward	Los Angeles, California
Roode, Albert Graham	Manhattan
Rose, Ralph James	Topeka
Taylor, Finis Alexander	Newton
Wittmann, Albert Frank	Wichita

SELECTIVE SERVICE

Kansas medical facilities are now fully organized to assist in the handling of the national defense and selective service programs.

Medical assistance is being provided to each of the 126 Kansas county selective service boards in the handling of physical examinations for selective service registrants. Thru an arrangement approved by the Kansas Selective Service Commission it is possible for all doctors of medicine to assist the medical examiners in the provision of these examinations, and in accordance therewith, a considerable number of counties have arranged to examine registrants on a rotating staff basis. Approximately 125 physicians are serving as members of the seventeen medical advisory boards located in this state which will assist in the handling of physical examination appeals desired by registrants or county boards. Four physicians are serving

as members of the four appeal boards in Kansas which will hear appeals on other questions.

The United States Army has notified the Society that it desires to utilize the services of Kansas civilian physicians as members of the induction boards in the state, located at Wichita and Leavenworth. These boards, which consist of: three internists, one general surgeon, one orthopedic surgeon, two ophthalmologists, one otorhinlaryngologist, one neuropsychiatrist, one clinical pathologist, and one dentist; will provide the final physical examinations of registrants approved by the county boards for induction in to military training. The Sedgwick County Medical Society and the Leavenworth County Medical Society are supervising necessary arrangements in that regard.

All except 149 of the 2,066 American Medical Association medical preparedness questionnaires in Kansas have been completed and returned. Eighty-six of the physicians who have not as yet forwarded the questionnaires are members of the Society. The remaining ones are non-members. The Society is corresponding with these physicians at the present time in the hope of obtaining a 100 per cent return of the questionnaires from this state.

Almost all of the county medical societies have appointed committees on medical preparedness. The state Society Committee on Medical Preparedness, consisting of Dr. F. L. Loveland of Topeka; Dr. C. C. Nesselrode of Kansas City; Dr. C. D. Blake of Hays; Dr. J. M. Porter of Concordia; Dr. N. E. Melencamp of Dodge City; Dr. J. J. Brownlee of Hutchinson; Dr. J. F. Gsell of Wichita, and Dr. J. T. Reid of Iola, is cooperating closely with Dr. R. W. Fouts of Omaha, Nebraska, the regional member of the American Medical Association Committee on Medical Preparedness in the coordination of other Kansas medical activities under the National defense program.

NEW WAGNER BILL

Senator Robert F. Wagner of New York announced recently that he will introduce a new bill pertaining to public health and medical care in the present Congress. Senator Wagner stated that his bill will be intended to follow the suggestions contained in President Roosevelt's Congressional message concerning the provision of medical care and that it will include a total federal appropriation of \$98,000,000 in the first year, which will be expended in part as follows: \$35,000,000 for the operation of approved state plans for medical care; \$10,000,000 in federal grants for temporary disability compensation, \$8,000,000 for hospital construction, \$13,000,000 for medical services to children, \$15,000,000 for general public health work, and \$8,000,000 for maternal and child health services.

APPOINTMENT

Dr. A. K. Owen of Topeka has been appointed Councilor for the State of Kansas by the Radiological Society of North America.

MEETING

A meeting of Kansas serologists was held on December 12 at Topeka, with Dr. R. C. Arnold of the United States Venereal Disease Research Laboratory of Staten Island as the speaker. Dr. V. D. Foltz of the Kansas State College of Manhattan conducted the meeting. Other speakers were: Dr. Charles A. Hunter of Topeka, Dr. J. L. Lattimore of Topeka, Dr. N. P. Sherwood of Lawrence, and Mr. Frank Victor of Topeka.

A sub-committee appointed in accordance with recommendations made at the above meeting, met in Emporia on January 5 for further consideration of evaluation and standardization of Kansas clinical laboratories. Dr. H. H. Asher of Wichita, Dr. R. T. Westman of Kansas City, Dr. C. A. Hellwig of Wichita, Dr. N. P. Sherwood of Lawrence, Dr. V. D. Foltz of Manhattan, Dr. Charles A. Hunter of Topeka, Mr. Frank Victor of Topeka, Dr. Fred P. Helm of Topeka, Dr. J. L. Lattimore of Topeka, Mr. Martin Duprey of Hutchinson and Dr. R. H. Reidel of Topeka, members of the sub-committee, attended the latter meeting.

POST GRADUATE CLINIC

The tenth annual Post Graduate Clinic of the University of Kansas School of Medicine will be held on April 7 to 10, inclusive. The Committee on Post Graduate Clinics is making every effort to offer a program that will be of value to the general practitioner in his office practice. Kansas physicians are invited to write to Dr. Lee H. Leger, Chairman of the Committee on Post Graduate Clinics, School of Medicine, University of Kansas, Kansas City, Kansas, for information relative to the course of the clinic.

The program will appear in the March issue of the Journal.

MEDICAL RACKETS

Medical rackets, ranging from the one wherein persons representing themselves as Federal agents seek to obtain "excess supplies" or others supplies of narcotics from doctors and particularly the relatives of deceased doctors, to the familiar ones pertaining to the collection of doctors accounts, are heard of from time to time. Word has come from Colorado that a medical racketeer is presently working in that state. The person represents himself as a buyer of second hand medical and dental equipment. He proceeds to obtain the confidence of physicians and offers to buy obsolete and unused equipment. He then explains that check in payment will be issued by his company and leaves with the instruments and is not heard from again.

FEDERAL INCOME TAX

Several new changes in the federal income tax law are described in the following bulletin which has been published by Mr. Frank E. McMullan, acting collector of internal revenue in Kansas.

The Revenue Act of 1940 has made important changes with respect to the liability of individuals for the filing of income tax returns. Individuals under the following circumstances are required to file returns covering the calendar year 1940:

Single individuals, or married individuals not living with husband or wife, having a GROSS INCOME of \$800.00 or more.

Married individuals living together having a combined GROSS INCOME of \$2,000.00 or more.

The net income is no longer to be used in determining the liability for the filing of a Federal income tax return. The liability of a citizen or resident of the United States to file a return is dependent upon his status as a married or single person, and the amount of his GROSS INCOME. Therefore, every citizen or resident of the United States will be required to file

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a return for the taxable year 1940 if his GROSS INCOME in 1940, regardless of the amount of his net income, comes within the amount specified above for his particular status. A return must be filed even though, by reason of allowable deductions from gross income and of allowable credits against net income, it develops that no tax is due.

Form 1040A should be used for GROSS INCOME of not more than \$5,000 derived from salaries, wages, interest, dividends, and annuities. Form 1040 should be used for GROSS INCOME from salaries, wages, interest, dividends, and annuities of more than \$5,000; or if any part of your income is derived from other than salaries, wages, interest, dividends, or annuities, Form 1040 should be used regardless of the amount of your income. While returns must be filed on or before March 15, 1941, with the collector of internal revenue for the district in which you reside, it is urged that they be filed as soon as possible after January 1.

If in doubt as to your liability for the filing of a return and if your employer has no blank return forms available, make request of the collector of internal revenue for the district in which you reside, or of any deputy collector stationed in your vicinity, for the 1940 individual income tax return and the printed instructions accompanying the form.

Failure of individuals, under the circumstances outlined above, to file returns will subject them to the penalties prescribed by law.

MINUTES

The following are the minutes of the meeting of the Committee on Medical Schools held in Wichita on December 15.

A meeting of the Committee on Medical Schools was held in Wichita on December 15. The following persons attended: Dr. F. J. McEwen, Chairman, Wichita; Dr. H. R. Wahl, Kansas City; Dr. N. P. Sherwood, Lawrence; Dr. O. O. Stoland, Lawrence, and Mr. Clarence Munns of Topeka. The remaining members were unable to attend by reason of inclement weather.

The minutes of the last meeting were read and approved.

The matter of out-of-state admittances to the University of Kansas School of Medicine was discussed. It was pointed out that most medical schools follow a policy of admitting nonresident students; that arrangements are thereby possible to provide internships, residencies, and similar training in other states on a reciprocity basis; that Kansas has several arrangements of this kind in existence; and that if out-of-state students are not accepted other states will obviously have reason not to accept Kansas students in their medical schools. On the other hand, it was agreed that serious difficulties are experienced in refusing to accept Kansas students at the University of Kansas School of Medicine in order that out-of-state students may be accepted.

It was felt that a medical school section in the Journal would afford many advantages to both the medical school and the profession. The central office was asked to discuss this matter with the Editorial Board, and to have the Board write Dean Wahl concerning arrangements in this regard if sufficient space is available.

The appropriation and other legislative needs of the medical school were discussed and the committee

agreed to assist in any way desired in this connection.

Dean Wahl reported that the medical school has recently completed its new x-ray department.

The question of patient admittance at the University of Kansas Hospitals was further considered and Dean Wahl stated he believed progress is being made in the handling of this problem.

A suggestion was also made that the medical school exhibit at state meetings are of assistance and interest to the membership, that numerous exhibits of this kind should be presented and that as many members of the medical school faculty as possible should be present during state meetings.

The next item of discussion pertained to the plans for this year's medical economic course at the school. Dean Wahl and Dr. McEwen were asked to confer further on this subject.

Adjournment followed.

The Minutes of the meeting of the Committee on Maternal Welfare held in Wichita on December 29 are as follows:

A meeting of the Committee on Maternal Welfare was held at the Lassen Hotel, Wichita, December 29, 1940. Present were: Drs. Ray A. West, Wichita, chairman; Porter Brown, Salina; L. A. Calkins, Kansas City; Howard C. Clark, Wichita; C. O. Meredith, Emporia; L. G. H. Lewis, McPherson; H. R. Ross, Topeka; and Mr. John F. Austin, executive secretary of the Sedgwick County Medical Society.

1. The meeting was called to order by the chairman and the minutes of the previous meeting were read and approved.

2. President West announced the formation of a Society Committee on Child Welfare, leaving this committee to deal solely with maternal welfare problems.

3. It was announced that the brochure on maternal welfare is now being edited. Dr. Ross said he believed the State Board of Health had funds with which to print several thousand copies. The committee felt that copies should go to all physicians in the state, libraries, and possibly to women's clubs.

4. Dr. Calkins, chairman of the sub-committee on mothers' training classes, said no further effort in this line had been made since the last meeting. He reported mothers' classes for the indigent are carried out in the maternity center and out-patient department of the University Hospital which reach half of the pregnant women in Wyandotte county. The women are given a diploma if they attend the full series of eight lectures.

Regarding such a program for the state, Dr. Calkins suggested it might be carried out in one of three ways:

- (a) Lectures by doctors.
- (b) Public health nurses.
- (c) Obstetrical nurse.

Such programs should be under the direction of the county medical society, which should supervise the program. Dr. Calkins explained that Cleveland started mothers' classes six years ago which were open to all women. In that time the maternal death rate dropped from four per thousand live births to 1.1 per thousand.

Motion by Dr. Brown, duly seconded and passed, that the committee accept Dr. Calkin's report, endorsing a plan of this kind, and requesting Dr. West to



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ask the State Society to approve a plan for mothers' classes.

5. Dr. Howard Clark, chairman of the sub-committee on incubator program, reported that at least one incubator has been placed in each county in the state, although there are a number of hospitals which do not have incubators. Dr. Ross explained that the State Board of Health's hot water type incubator can be obtained for \$17.00 in lots of fifty.

Dr. Ross reported the maternal death rate for 1939 for Kansas was 3.4 per thousand live births, which was the lowest for all time. Neonatal deaths were twenty-six per thousand and the birth rate for 1939 was 16.3 per thousand population.

The committee felt that the incubator problem was satisfactory at this time. It was suggested that local interest might be created among civic clubs towards the purchase of additional incubators.

Motion by Dr. Calkins, duly seconded and passed, that the sub-committee on incubators be commended on their work in the past year.

6. Dr. West reported that the obstetrical rules adopted by the committee and bulletinized to the profession were presented to the Kansas Hospital Association. Opposition was found, especially in some of the smaller hospitals. The provision for consultation in the rules seems to be the debatable factor.

Motion by Dr. Calkins, duly seconded and passed, that the Council of The Kansas Medical Society be asked to approve the program and to recommend its adoption by the State Hospital Association.

7. Letters from the Wichita Junior Chamber of Commerce and the Civitan Club regarding their drive for legislation for pre-marital Wassermann tests were read before the committee. Motion by Dr. Calkins, duly seconded and passed, that the committee reaffirm its previous recommendation that pre-natal Wassermann tests be run on all pregnant women, but that the committee go no further than this, since it is not within its province.

8. There was much discussion about the formation of a Kansas Obstetrical Society in connection with a post-graduate program on maternal welfare. Brought out in the discussion were suggestions that the University of Kansas Hospitals give credit for post-graduate work in obstetrics and/or the extension division of the University of Kansas be granted funds from the State Board of Health to carry the post-graduate program over the state. The discussion resulted in the following motion by Dr. Meredith, duly seconded and passed: That the Maternal Welfare Committee organize the Kansas Obstetrical Society and that such society cooperate with the State Board of Health in conducting post-graduate work in obstetrics.

9. Kansas' mortality and morbidity report was made by Dr. Ross, who said that reports from physicians were coming in satisfactorily, and on the basis of these reports statistics show that fifty per cent of the maternal deaths are preventable. These statistics were compiled by counties and not by hospitals, i.e. a patient from one county who is being treated in a hospital in another county would be counted in her home county.

The abortion problem was discussed and no further action was taken by the committee.

Motion by Dr. Meredith, duly seconded and passed, that an exhibit on maternal welfare, prepared from state and/or national material, be compiled for the scientific exhibit section of the next state meeting.

Adjournment followed.

BLIND PROGRAM

Dr. John A. Billingsley, State Ophthalmologist for the Kansas State Board of Social Welfare, recently issued the following cumulative report as of December 31, 1940, on examinations and treatment furnished under the Kansas blind program.

PROGRESS REPORT

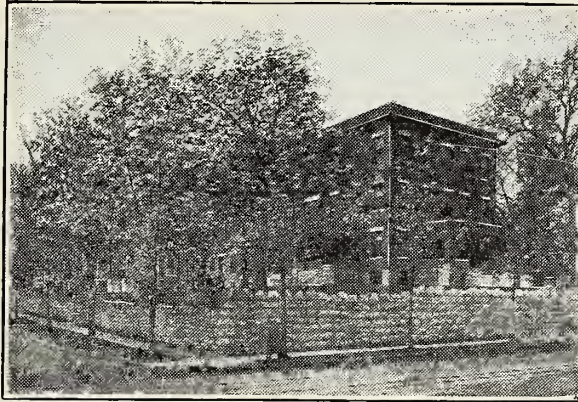
Number of the last eye report received	3,511
Number of eye examinations approved for Aid to the Blind	2,162
Number of eye examinations not eligible for Aid to the Blind	1,442
Number of eye examinations pending disposition	1
Numbers on the register not issued to cases between numbers 1 and 3,611	5
Number of cases not accepted and number was issued to report	1
Number of re-examinations made and fee allowed	278
Restoration of Sight Program	
Total number of cases approved for treatment..	900
Number of cases known to have refused treatment	115
Number of cases now under treatment	146
Number of cases treatment has been cancelled	31
Total amount authorized for cases now under treatment	\$13,232.15
Number of authorized treatments completed during December, 1940	18
Cases still eligible for Aid to the Blind	10
Cases not eligible for Aid to the Blind	8
Amount paid on 18 cases completed	\$1,656.62
Doctors' fees	56.018%
Hospital fees	36.490%
Optical companies fees	5.734%
Drugs	1.758%
Total number of cases complete at the present time	399
Number still eligible after treatment	147
Number of cases not eligible after treatment	252
Total amount paid for treatments since initiation of program	\$43,701.45
Prevention of Blindness Program	
Total number of cases approved for treatment..	441
Number of cases known to refuse treatment	3
Number of cases under treatment	82
Number of cases treatment has been cancelled	5
Total amount authorized for cases now under treatment	\$ 3,371.50
Number of authorized treatments completed during December, 1940	10
Cases still not eligible for Aid to the Blind	9
Cases now eligible for Aid to the Blind	1
Amount paid on 10 cases completed	\$342.66
Doctors' fees	69.4566%
Hospital fees	15.3213%
Optical Companies fees	11.0897%
Drugs	4.1324%
Total number of cases complete at the present time	264

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Total number of cases eligible for Aid to the Blind after treatment.....	6
Total number of cases still not eligible for Aid to the Blind.....	258
Total amount paid for treatments, since initiation of program.....	\$12,007.97

MEMBERS

Dr. A. C. Armitage, formerly of Kinsley, is now located in Hutchinson. Dr. C. H. Johnson of Stafford has taken over Dr. Armitage's practice in Kinsley.

Dr. Paul E. Belknap of Topeka was elected President of the Southwest Pediatrics Society at a meeting of that organization held in Kansas City in December.

Dr. M. L. Brakebill, formerly of Morland is now located in Sharon Springs.

Dr. David D. Holaday has been selected as director of the newly-organized full-time health unit in Riley county. Dr. Holladay, who was formerly the director of the Marion county full-time unit, will be succeeded at Marion by Dr. John W. Turner.

Dr. Joseph W. Spearing of Columbus, full-time health officer of Cherokee County, has issued on behalf of the Board of Health of that county a pamphlet showing the public health programs completed by the Board during the past year.

COUNTY SOCIETIES

The Butler-Greenwood County Medical Society held its monthly meeting and monthly cancer conference in Eureka on January 19. Dr. W. E. Janes, Secretary of the society, has prepared and forwarded to each member of the organization a detailed recapitulation of meetings attended during the past year. Two members are shown to have attended each of the ten meetings held during the year and nine as having attended all but one meeting.

The Central Kansas Medical Society held a dinner meeting in Russell on December 5. Speakers were: Dr. P. M. Krall of Kansas City, Dr. Samuel H. Snider of Kansas City and Dr. F. L. Loveland of Topeka. The following officers were elected for 1941: President, Dr. F. N. White of Russell; Vice-President, Dr. Alza M. McDermott of Ellis; Secretary-Treasurer, Dr. E. M. Morris of Hays.

The Cowley County Medical Society held its annual banquet on December 18 in Arkansas City. Officers elected for the new year: President, Dr. H. M. Stricklin of Arkansas City; Vice-President, Dr. H. E. Snyder of Winfield; Secretary, Dr. P. F. Theis. Mr. Chandler F. Jarvis of Arkansas City spoke on legislative procedures.

The Ford County Medical Society met on December 13 in Dodge City. The following officers for the new year were elected: President, Dr. J. B. Ungles of Santanta; Vice-President, Dr. F. L. Dennis of Dodge City; Secretary, Dr. D. R. Davis of Dodge City; Treasurer, Dr. V. O. Dowler of Dodge City; Censor, Dr. G. O. Spiers of Spearville; Delegate, Dr. C. E. Bandy of Bucklin, and Alternate, Dr. J. B. Ungles. Representative of the Upjohn Company of Kansas City presented a sound film on "Sex Hormones."

A meeting of the Franklin County Medical Society was held in Ottawa on December 18, and the following officers were elected for the next year: President, Dr. R. A. Gollier; Vice-President, Dr. C. W. Henning of Ottawa; Secretary,

Dr. M. E. Kaiser of Ottawa; Treasurer, Dr. P. E. Young. Dr. O. W. Davidson of Kansas City was the speaker.

The Geary County Medical Society met in Junction City during December, and elected the following officers: President, Dr. A. E. O'Donnell of Junction City; Vice-President, Dr. C. V. Minnick, of Wakefield; Secretary-Treasurer, Dr. L. S. Steadman; Delegate, Dr. E. A. Smiley of Junction City; Alternate, Dr. Robert M. Carr of Junction City, and Censor, Dr. W. A. Carr of Junction City.

The Johnson County Medical Society held a dinner meeting on December 10 in Olathe with the wives of members as guests. The following officers were elected for 1941: President, Dr. R. R. Becker of Spring Hill; Vice-President, Dr. Edmer Beebe of Olathe; Secretary-Treasurer, Dr. J. A. Knoop of Olathe; Delegate, Dr. C. W. Jones of Olathe; Alternate, Dr. D. E. Bronson of Olathe, and Censor, Dr. W. A. Carr of Merriam.

The Leavenworth County Medical Society met in Leavenworth in December and chose the following officers for the coming year: President, Dr. Paul Webster of Leavenworth; Vice-President, Dr. D. R. Sterett of Leavenworth; Secretary, Dr. H. J. Stacey of Leavenworth.

The Linn County Medical Society met in Mound City December 9. The following officers were elected: President, Dr. John T. Kennedy of Blue Mound; Vice-President, Dr. C. H. Lee of Pleasanton, and Secretary-Treasurer, Dr. H. L. Clark of La Cygne.

The Marion County Medical Society held their annual meeting and election of officers in Marion on December 4. The following were elected for the year 1941: President, Dr. W. M. Tate of Peabody; Vice-President, Dr. T. J. Thomas of Florence; Secretary-Treasurer, Dr. R. R. Melton of Marion; Board of Censors, Dr. A. K. Ratzlaff of Goessel; Dr. T. J. Thomas and Dr. D. D. Holaday of Marion; Delegate, Dr. R. R. Melton, and Alternate, Dr. G. J. Goodsheller of Marion. Dr. A. E. Hiebert of Wichita discussed "The Treatment of Burns," illustrating his talk with slides.

The Meade-Seward County Medical Society held a meeting on December 22 in Liberal. The following officers were elected: President, Dr. C. O. Mays of Liberal; Vice-President, Dr. E. J. McCreight of Liberal; Secretary-Treasurer, Dr. L. W. Zimmerman of Liberal.

The Miami County Medical Society held a meeting in Paola on December 11 and elected the following officers: President, Dr. S. D. E. Woods of Osawatomie; Vice-President, Dr. P. F. Gately of Louisburg; Secretary-Treasurer, Dr. W. L. Speer of Osawatomie; and Delegate Dr. O. C. Lowe of Paola.

The Montgomery County Medical Society held a dinner meeting on December 13 in Independence with wives of the members as guests. Dr. Andre Baude, a medical officer in the French army who is visiting in Independence spoke on experiences in escaping from occupied France. Officers elected for the new year are as follows: President, Dr. James G. Hughbanks of Independence; Vice-President, Dr. J. D. McMillan of Coffeyville; Secretary, Dr. I. W. Chadwick of Coffeyville; Treasurer, Dr. G. C. Bates of Independence.

The Pratt County Medical Society held a dinner meeting on December 20, with the wives of the members as guests. The following officers were elected for 1941: President, Dr. Herbert Atkins of Pratt; Vice-President, Dr. Cyril V. Black of Pratt; Secretary-Treasurer, Dr. Athol Cochran of Pratt; Censors, Dr. F. A. Thorpe of Pratt, Dr. W. D. Pit-

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man of Pratt, and Dr. Marshall Christman of Pratt; Delegate, Dr. J. R. Campbell of Pratt, and Alternate, Dr. Cyril V. Black.

The Shawnee County Medical Society held a meeting on January 6 in Topeka. Dr. A. D. Gray of Topeka spoke on "Sulfanilamide and Its Derivatives in the Treatment of Genito-Urinary Infections."

A meeting of the Southeast Kansas Medical Society was held in Chanute on December 12. Speakers were: Dr. F. C. Carmichael, Jr., of Kansas City, who spoke on "Diagnosis of Brain Abscess," and Dr. Lee Leger of Kansas City who spoke on "Therapeutic Uses of the Sulfanilamide Group of Drugs."

The Washington County Medical Society held a meeting on December 10 in Washington. Dr. Warren Morton of Green spoke on "Pneumonia Treatment From the Standpoint of the Country Doctor." The following officers were elected for the year 1941: President, Dr. L. J. L'Ecuier of Greenleaf; Vice-President, Dr. H. G. Hurtig of Hanover; Secretary-Treasurer, Dr. F. H. Rhoades of Hanover.

The Wilson County Medical Society held a meeting on December 16 in Fredonia. The following officers were elected for the new year: President, Dr. W. T. Rich of Neodesha; Vice-President, Dr. O. D. Sharpe of Neodesha; Secretary-Treasurer, Dr. E. C. Duncan of Fredonia.

The Wyandotte County Medical Society held its 46th annual banquet for the installation of officers at the Milburn Country Club in Kansas City on January 18. The following officers were installed: President, Dr. E. F. De Vilbiss of Kansas City; Vice-President, Dr. T. J. Sims of Kansas City; Secretary, Dr. C. A. Gripkey of Kansas City; Treasurer, Dr. W. W. Summerville of Kansas City; Censor, Dr. E. S. Miller of Kansas City; Delegates, Dr. H. L. Regier of Kansas City and Dr. T. G. Dillon of Kansas City.

DEATH NOTICES

Dr. William H. Jones, 63 years of age, died on November 7 in Ashland, of coronary thrombosis and chronic nephritis. Dr. Jones was graduated from the Lincoln Memorial University Medical Department of Knoxville, Tennessee in 1900. He was a member of the Ford County Medical Society.

Dr. John H. Rose, 63 years of age, died on November 27 in Kansas City, of lobar pneumonia following a ruptured appendix. Dr. Rose was graduated in 1906 from the Uni-

versity of Kansas School of Medicine. He was a member of the Wyandotte County Medical Society.

Dr. George W. Shadwick, 78 years of age, died on December 5 in Iola. Dr. Shadwick was born in Jacob, Illinois, in 1862. He was graduated from the Homeopath Medical College of Missouri, St. Louis, in 1900. He was a member of the Allen County Medical Society.

ANNOUNCEMENTS

The American College of Surgeons, 40 East Erie Street, Chicago, announces the following sectional meetings:

DATES	CITY	HDQTS. HOTEL	PARTICIPATING STATES
March 10	Minneapolis	Nicollet	Minnesota
11	Minnesota		North & South Dakota
13			Iowa, Nebraska, Montana, Kansas, Wisconsin, Manitoba
March 17	Pittsburgh	Wm. Penn	Pennsylvania, Ohio,
18	Pennsylvania		Virginia, West
19			Maryland, New Jersey, New York, District of Columbia
March 26	Salt Lake	Utah	Oregon, Washington,
27	City		California, Nevada,
28			Idaho, Wyoming, New Mexico, Arizona, Colorado, Montana, Utah

Hospital conferences will be held in connection with each of these meetings. Fellows of the College, members of the medical profession at large, and persons interested in the institutional care of the sick and injured, are invited to the Sectional Meetings; on the final evening of each meeting, a Meeting on Health Conservation to which the public is invited, will be held.

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held at Boston, Massachusetts, May 26th, 27th and 28th, providing essays of sufficient merit are presented in competition. The competing essays may cover either clinical or research investi-

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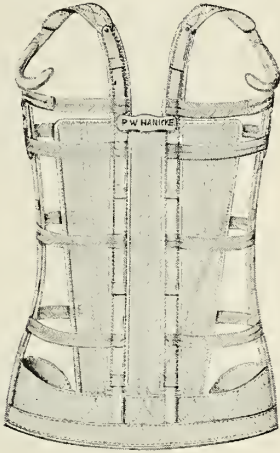
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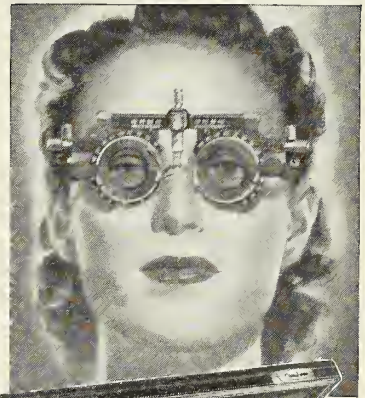
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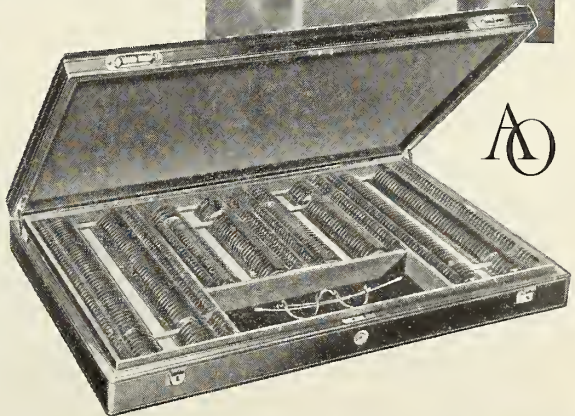
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Under certain circumstances, provided the volumes are not being actively used by the students, the Library will send such volumes as are needed to physicians in the state, on request, for a period of one week, provided carriage charges are paid both ways.

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gations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than April 1st. A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any journal selected by the author.

The Eighteenth Annual Meeting of the American Orthopsychiatric Association, an organization for the study and treatment of behavior and its disorders, will be held at the Hotel Pennsylvania, New York City, on February 20, 21 and 22, 1941. A registration fee will be charged for non-members. Preliminary program will be sent on request. For information write Helen P. Langner, M.D., Chairman, Publicity Committee, 1790 Broadway, New York City.

BOOK NOOK

BOOK REVIEWS

MENTAL THERAPY (studies in 50 cases) Volumes I and II—Louis S. London, M.D.; Covici-Friede, Publishers, New York.

The first five chapters of book one deal principally with fields of psychotherapy and the rest of the two volumes

are organized along the metapsychology of the author's interpretations. Other parts of the book deal with the case histories of various types of neuroses, borderline conditions, psychoses, and character disorders. Although the author gives excellent case material, the analytic interpretations are given very glibly and therapeutic responses are sometimes amazing. All of the described cases could not possibly be called analyzable in an orthodox sense, and modified techniques creep into the discussion. As far as can be learned, the author is not a recognized analyst but is a psychiatrist with psychoanalytic orientation and he seems to be oblivious to many phenomena in analytic patients—such as resistance and transference problems. Some of the author's cases, while theoretically correct, seem to be handled along the lines of "wild analysis" which has brought so much disrepute to psychoanalysis in this country. The book is interesting to read but a poor guide as to how to conduct formal psychotherapy. —H.C.

TEXTBOOK OF NERVOUS DISEASES—Robert Bing and Webb Haymaker. Price \$10.00. Pp. 838. C. V. Mosby Company, St. Louis. 1939. Fifth Edition. This is an excellent textbook of neurology and makes use of both European and American sources. It is beautifully illustrated and shows evidence of much augmentation and rearrangement, in keeping with modern advances in neurology. The base of the text is derived from the fifth German edition by Professor Robert Bing, Professor of Neurology at the University of Basel, Switzerland.

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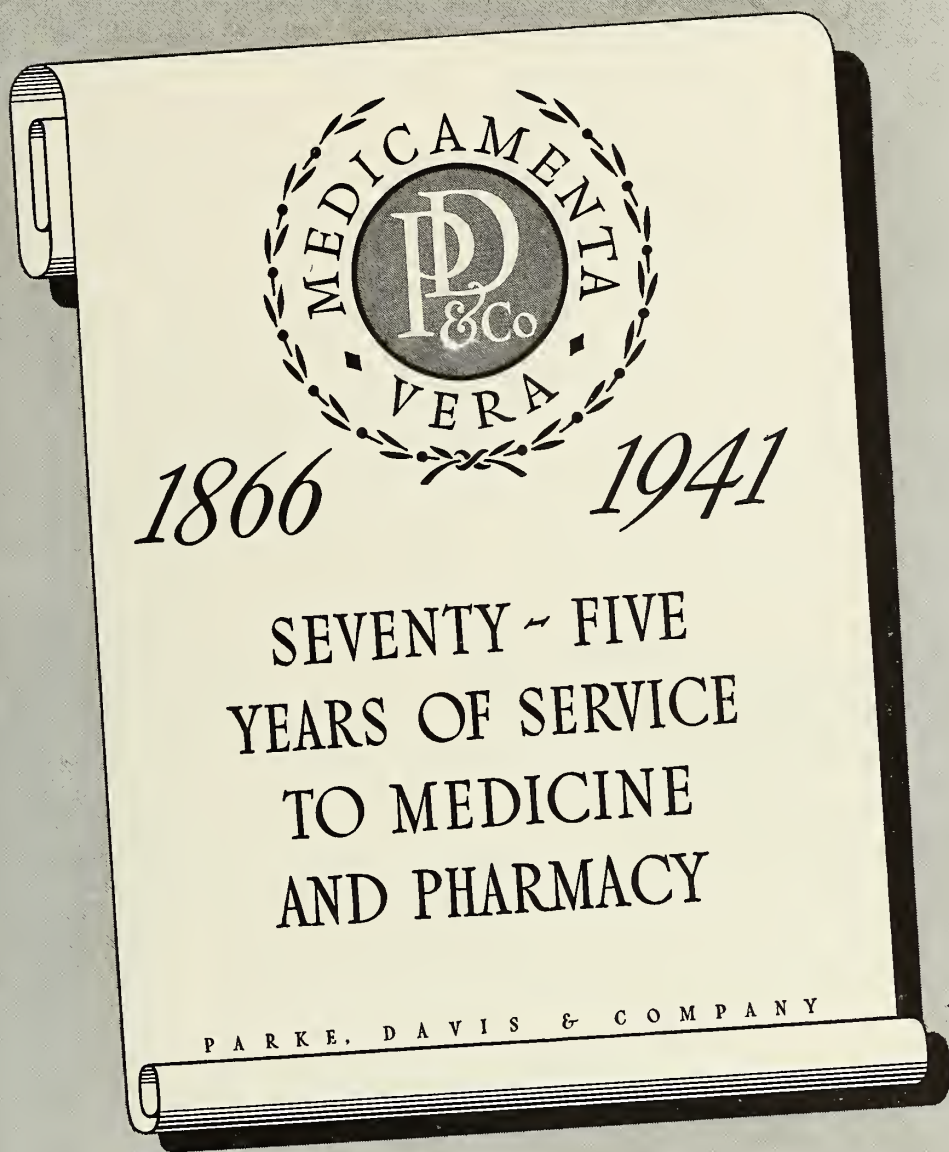
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A rather unusual arrangement of the chapter headings is noted, which deviates somewhat from the more orthodox textbooks in neurology. Modern neurological and neuro-surgical techniques are mentioned in treatment, as well as the recent developments in chemotherapy, including sulfanilamide and sulfapyridine in infectious processes. There is an excellent discussion of diseases of the autonomic nervous system, as well as a whole chapter on the subject of headaches. Unfortunately, the book begins to lose some of its stride when one reaches the final three chapters devoted to the psychoneuroses. These chapters include a lot of loose terminology, with a tendency to stick to "old school" techniques and a rather hostile attitude toward psycho-analytic doctrine is taken. This reviewer would recommend that everyone read the last page and a half of the book to elicit the psychiatric attitudes of the author. As for psycho-therapy the last paragraph and final footnote are the final blows to an otherwise extraordinary textbook. —H.C.

COMPLETE GUIDE FOR THE DEAFENED—A. F. Niemoeller, A.B., M.A., B.S. Published by Harvest House, 70 Fifth Ave., New York, N. Y., priced at \$3.00. The book is designed and written to serve as a practical guide so that the deafened may be lead to a fuller and richer life. The authors advice is explicit. He has attempted to point out helpful, constructive measures and advices available to the deafened with warning against the fraudulent and harmful.

KANSAS MEDICAL ASSISTANTS

The medical assistants of Manhattan recently held an organization meeting, elected officers and adopted a constitution and by-laws. Their group is composed of twelve members.

The Topeka Medical Assistants Society met on January 6. Mr. C. M. Rankin, Dean of Highland Junior College,

Highland, Kansas, discussed "Medical Secretaries Training in the Junior Colleges of America." Twenty-five members attended the meeting.

The Sedgwick County Medical Assistants Society met at a joint Christmas meeting with the Medical-Dental Assistants' Society and the Dental Secretaries on December 18. Mrs. H. A. Allison reviewed Hans Zinsser's "As I Remember Him," and the Wichita Civic Boys' Choir sang several numbers.

The state secretary reports the issuance of 156 membership cards to members of the Kansas Medical Assistants Society. If your group has not organized—January, 1941, is an ideal time to do so. Margaret MacKenzie, President.

AUXILIARY

PRESIDENT'S MESSAGE

Another mile post—the holidays—is passed and our real working months are ahead. This is the time of the year when we make inventory and check our goal for the year.

First are we stressing self education and public education in health education? Second, are all committees functioning? Third, are plans being made for one Public Relations Meeting or Tea?

Both Dr. C. Omer West, our Advisory Chairman, and Mrs. Reifsneider, our Public Relations Chairman, are especially urging us to have the public relations meeting with questions from your community answered by a physician. These were very successful where used last year.

Our State Board voted to recommend that each auxiliary subscribe for the Bulletin for the use of its president. We hope she will share it with others too.



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GYNECOLOGY—Two Weeks Intensive Course starting February 24th and April 7th. Clinical, Diagnostic and Didactic Course every week.

OBSTETRICS—Two Weeks Intensive Course starting April 21st. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting April 7th. Informal and Personal Courses every week.

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As I make my visits around the state I hope to meet each of you but until then please accept my greetings and best wishes for the New Year.

Mrs. T. D. Blasdel.

HYGEIA

You may take subscriptions for eight months for one dollar now. Subscriptions sent in by auxiliaries have increased from twenty-eight in 1924-25 to 9,647 in 1939-40.

PAST PRESIDENTS ATTEND

Five of our Past Presidents, Mrs. Basham, Mrs. Duncan, Mrs. Nodurft, Mrs. Urie and Mrs. Spake, were present at our State Board meeting. Four officers, three standing committee chairmen, four councilors and five county presidents attended and encouraging reports were sent by many of our members who could not be with us.

REPORTS

Our State Board voted to have our yearly reports printed again this year, so we shall need to have all reports in by March 15. Please turn to your Hand Book now and study the suggested outlines for your own committee work as this will help you in March in making out your report.

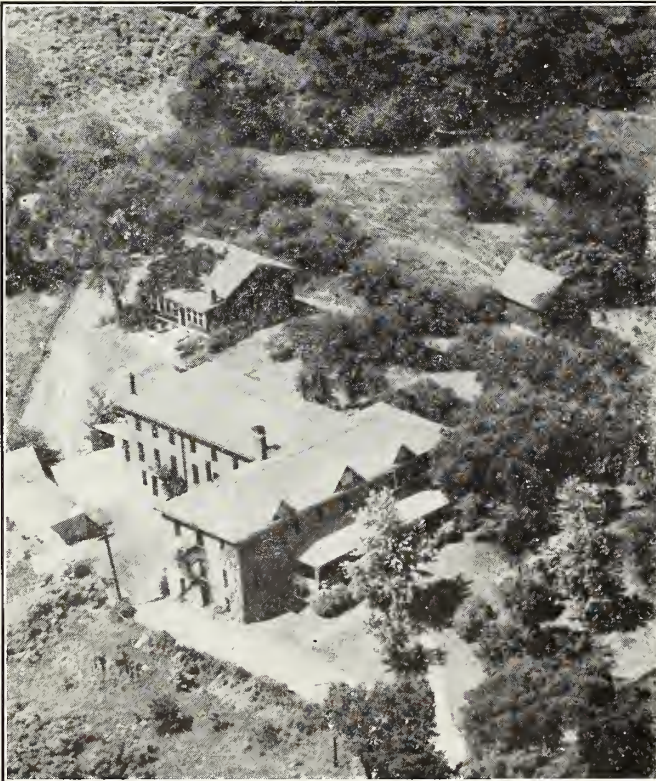
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THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

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Volume XLII

FEBRUARY, 1941

Number 2

THE PREVENTION OF TOX- EMIA IN PREGNANCY*

Charles Edwin Galloway, M.D.

Evanston, Illinois

I wish to state in the beginning that the subject discussed herein is prevention and not treatment of toxemia at the Evanston Hospital. We have had very little experience in the treatment of severe toxemia or eclampsia. Over a period of ten years, out of 8,307 deliveries we have had only eight cases of eclampsia and three of these cases had never been seen previous to their entrance into the hospital and all eight of them recovered. I also wish to say that since the cause of eclampsia and pre-eclamptic toxemia is unknown, it would not seem wrong if some empiricism is included in some of the things herein suggested. In William's Obstetrics, for example, there are listed thirteen possible solutions to the problem. The most accepted opinion is that eclampsia is due to some poison maternal or fetal in origin, or both.

Early vomiting of pregnancy could more than likely be eliminated as a state of toxemia; although there are a very few cases in which vomiting may be due to toxemia, usually it is true that they have become toxic because they vomited. We know of no other animal that starts vomiting when it is pregnant but we do see cases of eclampsia near term and postpartum among our domestic animals. Neither will we discuss nephritis here as it can be generally differentiated from pre-eclamptic toxemia by the history and the various physical findings and laboratory tests. Most intelligent adults know they have nephritis before we as obstetricians are consulted by them.

If I may be pardoned for a few generalities at this moment, I would like to say that the care of pregnancy should be shared by the patient more and more as time goes on. At present our women are put through school without proper training for their life's work and it is hoped that as time goes on they

will be properly taught more about reproduction and the things pertaining to their own responsibilities. Today too many of our women are well versed in contraception and too few have even a rudimentary knowledge of reproduction sufficient to cooperate well with their obstetrician. A girl's school teaches our girls the same subjects taught our boys. The young man comes to his responsibilities well prepared but some of our coeds come to theirs so frightened they can do little or nothing but vomit. On the other hand, their knowledge of contraception is complete at a rather early age. The birth rate in this country as a whole decreased thirty-three per cent between 1915 and 1936. I believe everyone is aware of the fact that this same condition prevailed in France prior to her downfall. It may be that we here are under the same influences that they were under. Primipara comprise thirty per cent of all labor cases but toxemia is nine times as frequent in primipara as in multipara. It can therefore be seen that we must give the patient having her first baby very diligent care in an attempt to prevent her from becoming toxic.

Close contact with one's patient with frequent examinations and advice will yield the best results. In order to obtain her cooperation one should quote her a flat fee for her entire care instead of separate fees for each visit. In this way she will feel free to come as often as requested. We will also in turn eliminate the temptation to interfere with forceps or other operative procedures which might in turn permit us to increase her fee. This same practice will also in time lead to her coming for her care at a much earlier date in her pregnancy. Too many women when pregnant present themselves for care only when they are in trouble or even wait until the onset of labor.

One does not need a large scientific laboratory to practice good obstetrics. Blood chemistry is of very little practical value at the present time. If we were to outline the care of the pregnant woman and name the five instruments of attack which we have at our command and should use, they would be about as follows:

1. A general physical examination and an attempt to eliminate all physical defect.

*Presented at the 81st Annual Session of The Kansas Medical Society, Wichita, May 14, 1940.

2. A scale.
3. A blood pressure apparatus.
4. A test tube and burner.
5. A knowledge of food.

GENERAL

All foci of infection should be eliminated. Infected tonsils and teeth should be removed early in pregnancy. For the past twelve years I have required a full-mouth x-ray of the patient's teeth shortly after her first visit and if apical abscesses are present those teeth should be extracted. I have found that fifteen per cent of my patients have abscessed teeth in spite of good dental care.

The basal metabolic rate is also important. An increased rate up to plus twenty may be looked upon as being within normal but if, as pregnancy advances, the basal rate remains low the patient should be given thyroid extract sufficient to correct it.

The patient's elimination is very important throughout her pregnancy but more so during the last trimester. Epsom salts should be used as often as every two or three days in some cases but not for long. Too much catharsis abstracts fluid from the circulation thus decreasing the urine and putting an additional strain on the kidney. In order to increase the urinary output daily doses of ammonium nitrate may be used—six to ten grains. As a rule, the volume intake of fluids should be less than the output if edema is present and one should consider from ten to thirty per cent of the ingested fluids being lost by way of the lungs and skin, depending on surrounding temperature and humidity.

Every toxic patient should have her activities curbed. She should be at rest, depending upon the severity of the case, from twelve to twenty-four hours a day. Too often we attempt to increase the elimination and decrease the production of metabolic products and at the same time fail to eliminate the activity which produces many of them. Sedatives should be used freely throughout the day and especially for sleep at night. So-called mild toxemia may furnish us with a premature separation of the placenta or uterine apoplexy, one of the most dangerous complications one can encounter.

SCALE

The scale is probably one of the most important instruments we have in our office practice. During the world war the incidence of eclampsia dropped to almost nothing in Austria and other central European areas due mostly to food rationing. This led to the publication of various articles advocating the control of weight as a means of decreasing the toxemia of pregnancy, the first of which was published in 1923. Since then we have seen a marked

decrease in the number of cases in private practice. Most of the cases of toxemia are furnished by those women who gain too rapidly and too much. One may contend that the deranged physiology of the patient causes both but from the practical side one will decrease the number of severe toxemias by controlling the increase in weight. The normal weight for the individual must be compared with the average weight which she has maintained over a period of time in order to arrive at a figure one thinks represents normal for her. She may be fifteen pounds underweight or overweight when first seen. She should not weigh more than twenty pounds over her normal weight at delivery which means an average gain of one-half pound a week if she is normal to start with or it may mean that she must lose weight throughout her pregnancy. If the patient is average height and twenty pounds overweight when first seen she should be told to lose weight or at least she should not gain. This loss of weight will not affect the baby providing her diet is balanced and contains the necessary vitamins and minerals.

If she shows a marked increase in weight she should be told to lose it by her next visit, especially so during the last trimester. Give her menus of 1200 calories a day and epsom salts twice a week and eliminate or markedly decrease her use of sodium chloride. Also watch for edema. Excess weight without edema may not be dangerous but sudden edema in an overweight patient means the water has become free in the tissues and such a patient is apt to have convulsions, pulmonary edema, cyanosis and tachycardia.

BLOOD PRESSURE

Here in this country the upper limit of systolic pressure is 130. If the blood pressure rises above 130 and increases each visit the patient must be regarded as developing toxemia and must be examined more frequently. On the other hand if she maintains a blood pressure above normal and it does not increase at each visit and there are no other signs of toxemia then she may be treated as essential hypertension and not toxic. I have delivered one woman twice who's systolic pressure has always been between 170 and 180.

An increasing pressure is most important particularly where it increases five to ten mm. each visit. Also the basic pressure must be considered. If at her first eight visits she has a blood pressure of 100 to 106 and she then shows a pressure of 130 that is as important as one who has been running 125 and then gives a pressure of 150.

One can not say that the blood pressure is a more reliable test for toxemia than examination of the urine but it would seem that toxemia causes a rise

in blood pressure before it causes kidney changes sufficient to allow soluble albumen to pass into the urine.

If the blood pressure rises to 170 or above the patient is in grave danger and if it is allowed to remain at that level for any length of time the patient will be very apt to develop chronic nephritis regardless of the fact that she may not have convulsions.

LABORATORY

There is no need to do elaborate tests on urine and blood. The heat and acetic acid test for albumen is quite all right and single specimens of urine will furnish the evidence one wants.

In addition to this a microscopic examination of both non-centrifuged and centrifuged urine should be done and in severe cases one should always look for acetone and diacetic acid. These are all procedures that can be done in one's office or even at the bedside and with very little equipment. One may be inclined to become a little careless at times after testing many hundreds of specimens for sugar because very few diabetic women conceive and there are very few people that are diabetic but who are not already aware of their condition. Most cases showing any reduction are cases of renal glycosuria. However, one should test for sugar because it has been found that if at about the fifth or sixth month one finds a positive test for sugar, that individual may be the one who will later furnish a case of pre-eclamptic toxemia. One must always bear in mind that toxemia is a generalized disease and that the toxin eventually affects every organ in the body especially the kidney.

Blood chemistry is of very little value in helping us to decide to keep or terminate the pregnancy. One can make as good a decision without it as with it and in some cases a better decision is based alone on physical findings, blood pressure and urine analysis. The only reliable blood chemistry is the uric acid determination and we should not burden the patient with unnecessary expense nor should we burden the laboratory with unnecessary procedures. Research work in this problem should proceed in institutions equipped and properly staffed to do it but at present the practitioner should wait until our knowledge has increased far beyond where it is now before attempting to use blood chemistry.

FOOD

The quality of the diet may not be the most important factor but certainly the quantity is of great importance. Most pregnant women eat too much. Only a few must eat more than they are accustomed to. The old adage "the pregnant woman must eat for two" was thrown out long ago by a great deal of evidence to the contrary.

Each individual must be considered separately and her basal rate and physical activity taken into account, but I have found that most of my patients get along very well on 1500 calories a day and a few of them must eat only 1200. They are asked to regulate their own weight gain allowing themselves only one-half pound gain a week providing they were normal at their last examination. If they were overweight then they must lose or stay the same until their weight is what may be called normal for that period of gestation. The patient should weigh herself at least every other day. The injection of sodium should be kept at a minimum.

The patient should not use salt at the table and if she shows signs of toxemia she should use no salt at all. Sodium bromide and soda bicarbonate should also be eliminated. In some cases where salt is restricted for any length of time the patient should be given two and one-half grams of potassium chloride a day in order to maintain a proper chloride balance. Excretion of sodium chloride is impaired during pregnancy but here again one can determine the NaCl in the urine in one's office laboratory. It should run two to three grams per day or less.

If toxemia develops it becomes necessary to administer glucose but this can be done just as effectively at home as in the hospital. Glucose by mouth is more effective in most cases than by vein or subcutaneous injection because it goes directly to the liver through the portal circulation. Long before severe symptoms develop the patient is told to buy Dextrose or Dyno and to measure out eight level tablespoons each morning and to see to it that that amount is consumed by night. She may use it in place of sugar or eat it as such.

As for protein one must be careful to advise its reduction only in cases where liver involvement predominates and not where there is marked edema and albumenuria. Quantitative albumen tests are easily done in one's office; for example, if the patient shows as much as ten grams of albumen she should be given as much as 150 grams of protein a day. The average pregnant woman requires a general diet of about seventy grams of protein, eighteen grams of fat and 350 grams of carbohydrate which is equivalent to about 1800 calories but as stated above she may need much less if she is overweight or signs of toxemia have developed. The general diet should be maintained including proteins until some definite indication for a decrease in protein is made such as one might find where there is hypertension, little or no albumen, reduction in urine, no edema and with headache and epigastric pain. Many patients with edema, albumenuria and moderate hypertension have in the past been made worse by the old adage "no meat or other proteins." Some patients, however,

should have their proteins reduced the last six weeks of pregnancy when there is some retention of nitrogen but it should not be eliminated entirely.

The average pregnant woman does not need to drink any milk unless she likes it and can digest it easily. About twenty per cent of all adults can not and should not drink milk. About 125 different foods were recently tested in one of our leading clinics as to their being the cause of gastric distress after eating. Five hundred patients were questioned and the three foods ranking highest as the cause of gastric distress were onions, cabbage and milk. The emptying time of the stomach in adults on a whole milk diet is about four hours whereas with a general diet it is only about three hours. A well-balanced diet with sufficient variety will furnish the patient with all of her various needs. If after careful examination and study it seems advisable to furnish the patient with additional calcium, iron or vitamins they may be administered in whatever form seems best. The routine use of these additional dietary elements is not looked upon as being good medical practice and may constitute a considerable increase in the financial burden placed upon the expectant mother and her young husband.

Just when a pregnancy should be terminated in order to avoid risking the mother's life or to avoid some permanent impairment to her health, such as chronic nephritis, requires long experience and good medical judgment. Consultation with someone equal or superior to the physician in charge should always be sought before attempting to empty the uterus if the toxemia becomes severe. Certainly we have no right to risk the mother's life unless she with full knowledge of her condition insists upon it. She may and does in many cases carry her next baby to term without becoming toxic.

Five doctors signed the Declaration of Independence. We doubt if one physician in ten thousand can name the five who signed this patriotic document. Not one in a hundred can name more than one member. We reproduce the five names in order that you may add them to your book of knowledge: Joshua Bartlett and Matthew Thornton from New Hampshire, Oliver Wolcott from Connecticut, Lyman Hall from Georgia, and Benjamin Rush from Pennsylvania. —Ill. Med. Journal.

According to provisional figures released by the State Registrar, Kansas births decreased 1,103 in 1940, as compared to the 1939 total, since 29,765 births were reported in 1939 and the provisional 1940 total is 28,662. There was one less death in the state last year than in the previous year—18,528 in 1939, and 18,527 (provisional) in 1940. Marriages increased markedly—with 22,333 in 1940, as compared to 19,630 in 1939.

TETANUS*

J. W. Randell, M.D.

Marysville, Kansas

This brief survey will cover three successful cases of traumatic tetanus treated at the Randell Hospital. If this paper stimulates even a little interest in the better treatment of wounds, the early use of prophylactic serum, or the early diagnosis of tetanus, I will then feel that my feeble effort shall not have been in vain.

Tetanus, a reportable disease in Kansas, was described by Tyson in 1896, as an infectious disease characterized by tonic spasms repeating themselves with increasing severity. I have never seen a better definition than this. The more acute the disease the higher is the mortality. This observation was made in 1859, by John Erichsen of Philadelphia.

During the Civil War the mortality was about ninety-three per cent in a group of over five hundred selected cases. At the close of the last century anti-tetanic serum was developed. This made a definite drop in the mortality rate. The cases treated during the World War (1914 to 1918) showed a mortality of sixty-five to eighty-seven per cent. I have known personally of eight cases of tetanus. Four of these patients died. The present mortality rate of tetanus in the United States is about seventy per cent.

CASE 1

White male aged three. Following the recovery of this patient the father, an attorney, summed up the case in the following words, quote, "All men belonging to the professional world are constantly confronted with problems. The doctor must know human nature and be able to see behind the veil of concealment. A laymen may be fearful that he has given the wrong home remedy or done the wrong thing. But by tedious questioning he may, when the patient is an intelligent adult, get a complete history which may lead to the seat of the trouble. To arrive at the seat of the trouble in a three-year-old child is difficult. It is then the duty of the parent to report intelligently all symptoms he may have observed. Following my son's illness I recall these symptoms:

1. The first day of the symptoms the patient was cross, irritable, nervous, and had a loss of appetite.
2. The next day the above symptoms were more pronounced, with exclamations in his sleep, and stiffening of his arms and legs.
3. The third day there was a fever, hardening of the muscles in the neck, back, legs, and pain in the back.
4. The fourth day of symptoms was an exaggeration of all the above symptoms with difficulty in swallowing."

*Presented at the 81st Annual Session of The Kansas Medical Society, Wichita, May 14, 1940.

This three-year-old boy was examined, Friday, November 30, 1937. While riding a tricycle several days before, he had fallen on the sidewalk. He complained of a pain in his back, right leg, and ankle. He was irritable and nervous. After an examination, the right ankle was supported with an adhesive dressing. He did not return until Monday, three days later. There was then more nervousness, the patient was more irritable, and walked with difficulty. The temperature was 102. On account of the history, it was deemed advisable to x-ray the spine. The film showed no fracture. In looking further for the cause of the trouble a dressing was removed from the right hand. The palm concealed a small infected wound. This wound was caused by a small splinter picked up while at play upon some farm machinery. The parent using a sterile needle had opened the wound a few days before. It contained a small amount of pus. This part of the history had not been given to the author by the parent. This resulted in the loss of three days time in making a correct diagnosis, and starting the proper treatment. A spinal puncture was made without delay. The spinal fluid was under much pressure. The fluid was clear. It was replaced by 10,000 units of serum. The wound was excised and 5,000 units of serum was injected in and about the wound in the right hand. The cell count of the spinal fluid was two. The removal of the fluid from the spine relieved the pressure and produced a quieting effect on the patient. After a rest of six hours, the patient was given 40,000 units of serum intravenously. A severe reaction followed. Six hours later the temperature, pulse, and respiratory rates were 103, 108, and forty-six. Twenty-four hours later 40,000 units of serum was given. There was less reaction than before. Six hours later there was more nervousness and restlessness. The third day 30,000 units of serum was given intravenously with considerable reaction. The fourth day 20,000 units was given intravenously. A chill of fifteen minutes followed. Two hours later the urine was voided involuntarily. The temperature rose to 105.2 degrees. The sixth day 10,000 units was given intramuscularly. The seventh day 10,000 units was given intramuscularly. This was the last serum given—the total amount of which was 165,000 units. Serum given intravenously was preceded by three minims of adrenalin chloride. The patient was kept quiet by the use of sodium amytal, grains one to two, repeated every four to eight hours. Glucose was supplied by vein and proctoclysis. The patient was dismissed on the tenth day.

CASE 2

Female age fifty-five. This patient fell on a sprinkling can, lacerating the soft tissues below both knees. The wounds were cleansed and sutured by her physician. No prophylactic serum was given. Five days after the injury the wounds were dressed. The wounds were under some tension, and the stitches were removed. On the seventh and eighth days the patient noticed some stiffness in the neck and jaws. On the ninth day she was given an immunizing dose of tetanus by her physician. There was difficulty in swallowing, and on the tenth day the patient entered the hospital. At this time she was unable to swallow water. Her temperature was 100. She was given 20,000 units of serum intravenously. Very little reaction was noted. Her temperature in two hours was 104.6, pulse 134, and respiration thirty-six. Twelve hours later 10,000 units

was given intramuscularly, and an equal amount intravenously. Two hours later her temperature was 105.4, pulse 132, and respiration fifty-six.

During the first day in the hospital the patient was twitching and jerking at intervals. Twelve hours later the spinal puncture was made. The fluid was under more than normal pressure and was replaced by 20,000 units of serum. Two hours later the temperature was 101, pulse 112, and respiration thirty. The patient was still unable to swallow. There was an increase in the muscular twitchings. The patient talked with difficulty. The third day 10,000 units was given intramuscularly. This was repeated in twelve hours. There was less rigidity, and the patient could swallow. The fourth day 10,000 units was given intramuscularly. No serum was given the fifth day. On the sixth day 10,000 units was given intramuscularly. On the seventh day 10,000 units was given intramuscularly. No serum was given on the eighth day. On the ninth day 10,000 units was given into the muscle. This was the last serum given. The total amount of which was 120,000 units. By the tenth day the jaws began to open a little wider, and by the twelfth day there was less jerking of the muscles of the back. The patient could now turn her head a few degrees to the right and left, and could flex the neck a little. The tetanus symptoms cleared up rapidly.

On account of the heart and kidney complications, this patient was not dismissed from the hospital until the fifth week. With the exception of nervousness, her usual state of health has returned. On the basis of one to four there was an albuminuria of plus one on admittance. The medication consisted, for the most part, of nembatal grains one and a half given every six hours. Morphine sulphate was given every six hours. This drug was given on six occasions, using one-sixth grains per dose. Other measures as to the intake of food and fluids were the same as in the previous case.

CASE 3

Male, age twelve, was injured May 27, 1939. A rusty piece of wire pierced the tissues of the left foot. The wire penetrated the foot between the fourth and fifth toes. The wound was treated one day later by the family physician. No prophylactic serum was given. The wound was treated nearly every day for eight days when the physician noticed definite symptoms of tetanus and sent the patient to the hospital for treatment. The temperature was 99.6, pulse 106, knee jerks were increased, slight positive Kernig sign was present and equal in each leg. There was some stiffness of the neck and jaws. The mouth could not be opened widely. The patient walked unsteadily in a rather spastic gait. Under local anesthesia a lumbar puncture was made. The spinal fluid was clear, under tension, and was replaced by 10,000 units of serum. Under ethylchloride anesthesia, the wound was cleansed, infected tissues excised, and 10,000 units was infiltrated into the tissues in and about the wound. The wound was dressed and kept moist with a saturated solution of boric acid. An additional 20,000 units of serum was given intramuscularly. The second day, 40,000 units was given intravenously, with a definite reaction resulting. Oxygen was given for five minutes. Some chilling was present. The third day 10,000 units was given intravenously and 10,000 units was given intramuscularly. Twenty minutes later a re-

action followed which lasted twenty minutes. The temperature was 104, pulse 132, respiration forty-six. Twelve hours later the above doses were repeated. The patient was slightly cyanosed. The fourth day 10,000 units was given intramuscularly and 10,000 units intravenously with no reaction. Twelve hours later 10,000 units was given intramuscularly with no reaction. On the fifth and sixth days an equal amount of serum was given intramuscularly. This was the last serum given, the total amount was 170,000 units. The patient was dismissed from the hospital on the thirteenth day. Sulfanilamide had been given to toleration for the first forty-eight hours. Sulfapyridine had been given on the seventh, eighth, and ninth days on account of the condition of the tongue, throat, and upper respiratory tract. The patient's tongue, damaged by the teeth, had ulcerated. The sedatives used were nembutal one and a half grains every four to six hours, and a few doses of morphine sulphate, grains one-tenth hypodermatically.

OBSERVATIONS

Graphic charts made on the second and third cases, show a peak of T. P. R. the first forty-eight hours, with a gradual return of each to normal in ten to fourteen days. The highest temperatures were 105.2 and 107 degrees respectively, per rectum. On account of the danger of sudden convulsive seizures, a thermometer should not be put under the patient's tongue. The highest pulse rates were 134 and 150. The highest respiratory rates were forty-four and fifty-two.

Of the three cases the lowest white cell count on admission was 15,500 and the highest was 29,050. The youngest of the patients was three and the oldest fifty-five years.

There was less reaction to the use of serum intraspinally than intravenously. Under ordinary cases it is neither necessary, nor desirable to give over one dose of serum into the spine. Two of the cases showed no serum sickness. One case showed a small amount of it during the eighth day. For about one year after the recovery, the three-year-old boy ran high temperatures, and a rapid pulse with any minor type of illness.

Daily comparative notations on the degree of Kernig sign, flexion of the chin on the sternum, stiffness of the neck, and the range of the teeth separation, are of considerable value in determining the amount of serum to be used. These readings may be used as an index to determine the time to more safely diminish, or discontinue the serum. For the want of a better instrument to daily measure the degree of separation of the jaws, a smooth slender wooden wedge graduated in millimeters may be used. If the separation of the jaw will permit, an inside type caliper will give an accurate day to day reading.

It is desirable to change the position of the patient often for the sake of rest, as well as the prevention of chest complications. No use was made of

Avertin or the ultra violet light. Sulfanilamide seemed to be an added burden to the one patient on which it was used; while sulfapyridine was a definite benefit in combating the upper respiratory complications. The patient should be in a perfectly quiet environment. Too much light in the room is irritating. It is important to have competent special nursing. These patients are mentally alert, and are amenable to the use of proper psychology.

SUGGESTIONS

1. Lay education to get the patient to consult the physician early for the proper care of wounds.
2. Removal of foreign bodies and all infected, or devitalized tissues from wounds.
3. Prophylactic doses of 1,500 to 3,000 units of serum to be repeated in three to five days in severe types of wounds.
4. Alertness on the part of the physician to recognize the early symptoms of tetanus.
5. Once the diagnosis is made, the body should be flooded with enough serum to neutralize the toxins of the tetanus infection, keeping in mind the danger of maximum doses given intravenously.
6. The importance of the use of adrenalin before and oxygen following the use of the serum intravenously.
7. Adequate sedatives should be given to promote rest and general measures taken to keep up nourishment and body fluids.
8. The desirability of further studies in the use of sulfapyridine for the upper respiratory complications of tetanus.
9. The necessity for the use of Tetanus Toxoid to establish life time immunity for students, rural and industrial peoples. Children should, after the first year, be immunized against tetanus as well as against other diseases.

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"The Southern doctor is a gentleman and a scholar.

"This fact was impressed on Louisvillians by the conventions of the Southern Medical Association which ended yesterday.

"With few exceptions conventions are pretty much standardized these days. The program consists of pleas for cooperation, speeches citing the need for legislation favoring the convening group, a resolution which says, in effect, tax the other fellow. There is a banquet, a reunion, a dance, much drinking. The group's secretary and one or two other dependable members do most of the work.

"The doctors were different. Their convention was more like a condensed post-graduate course in medicine. There was a sharing of professional knowledge from which not only doctors, but laymen will benefit."—From the *Courier-Journal*, Louisville, Kentucky, reprinted in the *Journal of the Tennessee State Medical Society*, December, 1940.

THE DIAGNOSIS OF THYROID MALIGNANCY

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Thyroid malignancy is seldom diagnosed preoperatively because it often simulates benign goiter and when the late symptoms do appear, making the diagnosis apparent, it is usually too late for effective radiation therapy or surgical intervention. The clinician and surgeon alike must suspect all nodular thyroids of being malignant in order that the hopeless state of inoperability may be forestalled.

A thyroid neoplasm, in its early stages of development, possesses certain characteristics which may be of value in making its recognition possible. The history is important and often more dependable than the physical examination. The rapid growth of a preexisting goiter, in patients past forty, or the sudden appearance of a tumor at that age, with no previous thyroid enlargement, are diagnostic signposts which should not be ignored.

Upon examination, malignancy usually presents a contraction of the sternocleidomastoid muscle on the affected side with a limitation or fixation of the tumor in its transverse mobility. However, this phenomenon is not in evidence if the tumor is located posteriorly. Involvement of one or both of the recurrent laryngeal nerves, with symptoms varying from hoarseness to complete aphonia is rarely seen in simple goiter, but is of distinct clinical significance in carcinoma.

The late manifestations of pain radiating posteriorly to the mastoid, tumor hardness with fixation and pressure symptoms of dysphagia and cyanosis are unfavorable prognostic signs which preclude the possibility of relief by surgery.

At operation a true thyroid neoplasm presents certain findings suggestive of malignancy even when cancer is unsuspected.

1. Highly developed vascularization in adenomata not associated with hyperthyroidism, may indicate malignant changes and frozen sections should be made during the course of the operation.

2. The muscles overlying a malignant thyroid are unusually pale in color.

3. If the operator encounters technical difficulty in dislodging a goiter, which seems to be "fixed" he should be suspicious of cancer for a neoplasm in its extension has a tendency to

grow between organs rather than to displace them.

4. The presence of necrotic fluid in a thyroid, simulating an abscess is strongly suggestive of cancer and warrants an immediate biopsy, which should not, however, be taken prior to radical thyroidectomy because of the imminent danger of disseminating the growth and frozen sections should be made and reported during and not after the operation.

CLASSIFICATION AND PATHOLOGY

1. Papillary type of adenocarcinoma.

Presumably of lateral anlage, usually seen in young individuals. Often histologically essentially benign, but tending to undergo unmistakable malignant degeneration with capsule invasion and lymphatic metastasis. Apt to recur unless completely removed surgically. Only slightly radiosensitive. Makes up about thirty per cent of all cases.

- a. Papillary adenocystoma—low grade malignancy.

- b. Papillary adenocarcinoma—moderate malignancy.

2. Fetal type of adenocarcinoma.

The most common type of all thyroid cancers. Of mesial anlage. Seen at all ages but more prevalent between thirty-five and fifty. Presents extreme variability in histology, from embryonal solid tumors to tumors showing extensive cystic degeneration. Only regular criterion of malignancy is evidence of blood vessel invasion. May show capsule invasion. Is extremely resistant to radio therapy. Makes up nearly forty-five per cent of all cases.

- a. Malignant adenoma—low grade malignancy.

- b. Alveolar type of adenocarcinoma—moderate malignancy.

3. Epidermoid type of carcinoma.

Thyroglossal duct origin. An extremely rare form of thyroid tumor usually seen after sixty years of age. It is generally fatal running the course of epidermoid carcinomata. Its radiosensitivity corresponds to the degree of cell differentiation. Makes up one to two per cent of all cases.

4. Giant cell type of carcinoma.

Origin can usually be traced to preexisting adenoma. Characterized clinically by sudden rapid increase in size. Occurs in individuals fifty to sixty years of age and is almost certainly fatal within six to eighteen months; radio-resistant. Makes up about eleven per cent of all cases.

a. Polyhedral cell type.

Enormous tumor giant cells with multiple mitoses, scant stroma, marked vascularity, often perithelial arrangement, much necrosis, extreme anaplasia, invasion of the entire gland, regional vessels and lymphatics. At times resembles extremely malignant forms of mammary cancer.

b. Spindle cell type.

Cases range from quite orderly pressure "spindling" of epithelial cells as seen in a rapidly growing fetal adenoma to fast growing tumors resembling fibrosarcomata with many tumor giant cells.

5. Small round cell type of carcinoma. Origin disputed. Occurs in two forms.

a. Compact type: Origin can usually be definitely traced to a preexisting type of adenoma. Made up of small round cells, resembling fetal type of epithelium. Shows some tendency to form acini. Invades the entire gland and blood vessels metastasizing by them. Occurs usually in individuals over fifty and runs a uniformly fatal course within a year after onset; often within three or four months. They are apparently extremely radioresistant. Histologically, the picture is a glandular replacement by small round cells. Often it is seen in association with areas of marked lymphocytic hyperplasia. Frequently there is associated acinar hypertrophy which confuses the picture with that of struma lymphomatosa or Hashimoto's disease.

6. Sarcoma.

The existence of true sarcomata is still open to conclusive proof, although certain cases of "spindle" type adenocarcinoma have been reported as fibrosarcomata and some of the small round cell carcinomata of the diffuse form arising from struma lymphomatosa have been held to be lymphosarcomata. The reticulum cell sarcoma, while extremely rare, is recognized as a pathological entity and may exist as such.

CLINICAL FEATURES

Fortunately the incidence of thyroid malignancy is low, occurring once in every 910 cases, for thyroid neoplasms all too frequently go undiagnosed and treatment is postponed until too late to effect a cure.

Thyroid newgrowths, unlike malignancies occurring elsewhere, are peculiarly individualistic in their radiosensitivity. Ordinarily highly undifferentiated and anaplastic tumors show a marked regression in growth when subjected to x-ray or radium emanation, but thyroid malignancy, regardless of cell dif-

ferentiation, seems consistently radioresistant.

The combination of radical thyroidectomy, by block dissection, followed by concentrated radium or x-ray therapy, would in the light of this knowledge, produce the most desirable results.

Carcinoma rarely develops in a hyperplastic gland and consequently the syndrome of thyrotoxicosis is seldom associated with malignancy, for this reason the administration of iodine, preoperatively, is not only unnecessary but actually harmful, for it tends to accelerate the growth of the tumor. Pregnancy, worry and emotional stress are also factors which have proven injurious.

DIFFERENTIAL DIAGNOSIS

It should be recalled that two per cent of all nodular goiters eventually show malignant changes and that all adenomata, regardless of size, can become malignant or may be so from the beginning. Surgery in these cases is a valuable prophylactic measure and should be exercised at every opportunity.

1. Benign thick-wall cysts, may at times be mistaken for malignancy, the point of differentiation lying in the pathologist's report which should reach the surgeon during the operation.

2. Acute thyroiditis: Many rapidly growing carcinomas, accompanied by fever, chills and leukocytosis show a clinical picture like that of acute thyroiditis, but generally the rise in temperature is not so marked. In this type of neoplasm the prognosis is grave and surgery useless.

3. Chronic thyroiditis of the Hashimoto type occurring in women over forty-five years of age is often misleading, but the lesion never protrudes through the capsule of the thyroid which is bilaterally enlarged and has less vascularization than normal. The gland can be easily removed in its entirety and frozen sections establish the diagnosis.

CASE REPORT*

History: A white woman forty-one years of age consulted her family physician on February 21, 1940, complaining of difficulty on swallowing, hoarseness and intermittent pain in the region of the thyroid, which radiated to the base of the skull on both sides, but more especially on the right.

She first noticed an enlargement in her neck in February, 1939, but it gave her no trouble until November, at which time the tumor began to grow rapidly and produced pressure symptoms.

She is the mother of seven children, all of whom are living and well, the youngest six years of age. She had small-pox at the age of twenty-nine but since that time has been exceptionally well. She has had no previous operations and the family history is negative for cancer.

Physical Examination: Revealed a calm, well

nourished adult white female, who did not appear acutely ill. Temperature 98.8 degrees, pulse seventy-eight, respiration eighteen and weight 140 pounds. The eyes protruded slightly but there was no lid lag. There was a very obvious swelling in the neck about the size of a small orange, which was smooth in contour and was extremely resistant to touch. The tumor was "fixed" and could not be moved transversely. No adenopathy was present. The heart, lungs and abdomen were free from pathology. Rectal and vaginal examinations were negative and the superficial and deep reflexes were normal.

Laboratory Data: Blood count.

(1) H.b.—seventy-two per cent.

R.b.c.—3,720,000

W.b.c.—8,430

Differential count normal.

(2) B.M.R. plus twelve.

(3) Urinalysis—neg.

(4) Kline, Kahn and Wasserman reports—neg.

Tentative Clinical Diagnosis: Thyroid malignancy. Operation.

The patient was given three grs. of nembutal at six a.m., one and one-half grs of nembutal and an H. M.C. No. 1 at 7:30 a.m. and was taken to surgery at 8:30.

A collar incision was made under two per cent procaine local infiltration anesthesia and the skin was dissected from below upward forming a flap, exposing the pre-thyroid muscles which were pale in color and thinned out by stretching. They were divided transversely between muscle clamps in their upper one-third and were freed with difficulty from the underlying tissues.

The thyroid capsule was greatly thickened and was adherent to all adjacent structures, making it necessary to divide the right sternocleidomastoid muscle in order to expose the right lobe of the gland. What appeared, at first, to be the true thyroid capsule, proved to be a thick fibrinous exudate which was incised longitudinally and stripped back laterally. At this point, there was a free escape of gray, necrotic fluid which was under tension. The pyramidal lobe, which was hollowed out, resembling an abscess cavity, was of the consistency of gristle and came away in irregular pieces. Because of its friability the tissue could not be clamped or sutured.

The superior pole of the right lobe extended upward as high as the cricoid cartilage and then dipped posteriorly, and was dislocated with great difficulty. Vascularity was pronounced and as the operation progressed, increasing technical difficulties were encountered. A total lobectomy was performed on the right side along with complete extirpation of the pyramidal lobe.

The left lobe, which was only partially involved at its inferior pole was resected, leaving a thin layer of capsule. The right recurrent nerve, which was imbedded within the neoplastic mass was sacrificed in the block dissection. Two perforated soft rubber drains were placed in the thyroid fossae on either side of the trachea and were brought out laterally through the angles of the wound.

The skin was closed by a series of wound-clips and dry dressings were applied. A soft rubber sponge was taped tightly over the dressings for thirty-six hours for the purpose of eliminating dead air spaces and making pressure over the skin flaps.

Diagnosis at the operating table: Thyroid cancer. Pathologist's report.

Macroscopic Examination: The material consists of a number of irregularly shaped sections of thyroid gland, the largest of which measures thirty-five by twenty-five by twenty mm. The surfaces are all yellowish-brown in color, varying in shape, coarsely granular and nodular in appearance, soft and firm in consistency. Cross section shows soft, yellowish-granular appearing tissue, also a dense yellowish-gray somewhat friable tissue with scattered islands of mucinous-appearing tissue.

Microscopic Examination: Sections through the thyroid gland show a diffuse growth of highly anaplastic cells penetrating widely throughout a stroma which is hyalinized in character. There are very many atypical nuclear structures and hyperchromatic forms.

Another section through the tumor shows extensive necrosis and lymphoid tissue along one edge. The tumor is so highly undifferentiated that it is difficult to tell what its origin is but many of these undifferentiated cells are attached to a delicate reticulum which runs in between the cells in addition to a heavy reticulum seen in the other slides. The highly anaplastic cells and markedly deformed nuclei are found everywhere. Sclerosis also seems to be of neoplastic nature.

Diagnosis: Highly undifferentiated reticulum cell sarcoma.

Treatment: X-ray therapy was begun within twenty-four hours and 200 R units were given each day on alternate areas until the maximum of tolerance was reached. A total of thirty-nine treatments, between February 16th and March 26th, were administered, with an aggregate dosage of 6,800 R units.

Radiation had absolutely no effect on the growth of the sarcoma which had evidently metastasized to the regional lymph nodes and mediastinum. Radium packs were not employed due to the financial status of the patient.

The postoperative course was relatively smooth until the second month when an unproductive asthmatic cough, with dyspnea and cyanosis developed. Her condition became progressively worse and on May 5th the patient succumbed to asphyxiation. A postmortum was refused.

*We are indebted to Doctors H. O. Bullock, J. T. Swanson and F. C. Helwig for their assistance in the preparation of this case report.

SUMMARY

1. Ninety per cent of all thyroid malignancies arise from pre-existing adenomata.
2. Two per cent of all nodular goiters eventually become malignant.
3. Malignancy is seldom associated with thyrotoxicosis but when it does occur, the symptoms are usually mild.
4. Thyroid malignancy, because of its close resemblance to benign goiter, is difficult to diagnose preoperatively. However, the history and physical findings, are fairly characteristic.
5. At operation advanced malignancy presents anatomical alterations which are unmistakable.
6. Unlike malignant tumors, occurring elsewhere,

thyroid neoplasma fail to conform to the principle of tumor radiosensitivity because highly undifferentiated newgrowths seem to be uniformly more radio-resistant than those showing less atypical cellular differentiation.

7. A rare case of reticulo-cell sarcoma has been reviewed.

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PNEUMOCOCCUS MENINGITIS IN A PATIENT AGE SIXTY WITH RECOVERY

CASE REPORT

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Until the advent of chemotherapy and the thirty-two types of rabbit antiserum, pneumococcus meningitis was almost universally fatal. Even with the use of these agents it is estimated by Hodes, Gimbel, and Burnett¹ that the mortality is still about fifty per cent. The disease is most often seen in children and young adults, but a few cases past middle life are reported. In reports available the oldest case with recovery was forty-nine years of age. It was thought therefore that the recovery of a patient age sixty would be of interest. Through the courtesy of S. M. Anderson, M.D., of Wichita, Kansas, with whom the patient was seen, the following case report is presented.

HISTORY

Mrs. M. G. A., white female, age sixty, was admitted to the Wichita Hospital, April 30, 1940, in a state of coma with the history that some ten days previously she had taken ill with an acute upper respiratory infection. Two days previous to admission pain in the right ear was complained of, and on the day before admission the ear had drained. There had been marked nausea and vomiting and severe headaches especially the day previous to admission, which was thought by the other members of the family to be due to food poisoning. The morning of the day of admission she had a very high temperature and lapsed into a comatose state.

The past history showed the patient had never had

a serious illness and for the most part had enjoyed good health.

The family history was irrelevant.

PHYSICAL EXAMINATION

The patient was a well nourished, well developed, white female past middle age, obviously acutely ill. She was lethargic, could be aroused only with difficulty and did not respond to questioning. Marked dehydration was evidenced by the extreme dryness of the skin. The pupils reacted to light, the eye grounds showed no papilledema, and the vessels showed only moderate tortuosity and sclerosis. The extrinsic eye muscle movements were all present and there was no nystagmus. There was a purulent discharge from the right ear, and the tympanum was bulging. The tonsils were moderately enlarged but showed no injection. The teeth were poor showing need of dental repair and hygiene. The tongue was coated and dry but protruded in the midline. The neck was stiff, and forward movement of the head caused pain. The heart was normal in size and position, and there were no murmurs. The blood pressure was 140/80, and the pulse was 110, regular and of good volume. The lungs were negative to auscultation and percussion, and respiratory rate was thirty. The abdomen was slightly distended but soft, and no masses or enlarged glands were palpable. Pelvic examination was entirely negative, and there was no adenopathy. On neurological examination the only positive finding was stiffness of the neck, the Babinski and Oppenheim on both sides was absent, and the Kernig was not elicited. All the deep tendon reflexes were present, equal, and normal including the abdominal.

DISCUSSION

The accompanying table gives a resume of the patient's progress showing the grams of sulfapyridine administered, sulfapyridine blood levels urinary findings, hemoglobin percentages, white blood counts, spinal fluid cell counts, maximum temperature, maximum pulse, maximum respiration, and other pertinent laboratory data on the respective hospital days. The date of administration of anti-pneumococcus serum and date of blood transfusion is also shown.

The initial spinal puncture showed the pressure markedly increased and the fluid milky. With succeeding punctures the pressure decreased, and the fluid gradually became clear. Only the fluid from the first puncture was examined bacteriologically. It will be noted that no blood cultures are reported. Venipuncture for culture was attempted but failed due to the collapse of the peripheral veins from the marked dehydration. While culture of the discharge from the right ear showed the staphylococcus, the ear infection was thought to have been the portal of entry for the meningeal infection. Glycerine and phenol had been used in the ear before admission to the hospital which may have altered the bacteriological findings. It will be noted that the only significant urinary findings, other than those of the admission specimen, were crystals identified as sulfa-

Date	Gms. Sulfapyridine per Twenty-four Hours	Sulfapyridine Level (Blood)	Urine	Hb.	RBC	WBC	Spinal Fluid Cell Count	Max. Temp.	Max. Pulse	Max. Resp.	Other Laboratory Work and Therapy
April 30, 1940	3 gm.		Clear, straw, acid, 1.015, Alb.-5 mm., Sugar-Neg., Blood-Neg. Few coarsely granular and occasional hyaline casts, pus 8-10 per HPF.	82%	4,130,000	19,550		103	110	30	Direct smear from spinal fluid showed many white blood cells and a few Gram positive cocci. Culture showed abundant growth with morphology of Pneumococci. Paracentesis of right ear, liberating small amount of bloody serum.
May 1, 1940	* 3 gm. * * 1 gm. 3 gm.	7.3 mg.									
May 2, 1940	* * * 2 gm. 3 gm.	10.4 mg.	Negative for blood	75%		18,250	2,400	103	108	22	
May 3, 1940	6 gm.	12.3 mg.	Negative for blood	72%		21,600	550	99.4	92	22	
May 4, 1940	6 gm.	12.7 mg.	Negative for blood Few sulfapyridine crystals.	69%		15,850	350	99.4	92	22	
May 5, 1940	6 gm.	9.2 mg.	Negative for blood	68%		13,000		99.8	94	22	
May 6, 1940	4 gm.	10 mg.	Negative for blood	65%		16,850	68	100.4	106	20	
May 7, 1940	5 gm.	10.3 mg.	Negative for blood	63%		13,950		99.6	90	24	
May 8, 1940	5 gm.	10 mg. 6.2 mg. (Spinal fluid)	Negative for blood	63%		19,950	40	99.8	76	20	
May 9, 1940	6 gm.	8.3 mg.	Negative for blood	60%		22,300		99.4	96	20	
May 10, 1940	5 gm.	10 mg.	Negative for blood	62%		17,900	47	99.4	90	22	
May 11, 1940	5 gm.	10 mg.	Negative for blood Many sulfapyridine crystals.	64%		14,300		99.2	92	24	
May 12, 1940	4 gm.	10.1 mg.	Negative for blood Many sulfapyridine crystals.	63%		9,100	41	99	94	22	
May 13, 1940	4 gm.	9.6 mg.		62%		10,250		99.2	90	24	
May 14, 1940	5 gm.	7.5 mg.	Negative for blood	59%		11,250	32	99	100	20	
May 15, 1940	1 gm.	9 mg.	Negative for blood	57%		10,050		98.8	100	20	
May 16, 1940	Discontinued	2.1 mg.	Negative for blood Few sulfapyridine crystals.	63%		10,000	32	100	102	28	
May 17, 1940	4 gm.	.46 mg.	Negative for blood			11,050		99.8	108	24	
May 18, 1940	6 gm.	6.2 mg.				9,800	19	99.4	100	22	
May 19, 1940	6 gm.	9.2 mg.				7,350		99.4	88	20	
May 20, 1940	2 gm.	7.8 mg.	Negative for blood			5,900	20	99.4	86	20	
May 21, 1940	2 gm.	2 mg.	Negative for blood	70%		6,700		99.6	80	20	
May 22, 1940	Discontinued	2.1 mg.	Negative for blood	70%		6,750	14	99	80	22	
May 23, 1940	3 gm.	0.72 mg.	Negative for blood	68%		7,850		99.4	80	20	
May 24, 1940	3 gm.	3.6 mg.	Negative for blood	70%		6,400	11	99.4	80	22	
May 25, 1940	Discontinued	5.9 mg.	Negative for blood	70%		6,850		99.4	80	24	
May 26, 1940	Discontinued	1.8 mg.		71%		7,700		99	80	20	
May 27, 1940	Discontinued			70%		9,050		99.2	82	22	
June 3, 1940	Patient dismissed after six days of normal temperature.										

*Dose vomited shortly after administration; dose repeated.

**One-third vomited, remaining two-thirds taken and retained.

***Vomited, not repeated.

pyridine. The patient tolerated the drug well, and it was found that the blood level could be maintained at a desirable level at times without giving the recommended dose of one gram every four hours. The only evidence of toxicity to the drug was a moderate degree of cyanosis and a gradual fall in the percentage of hemoglobin. The level of the blood sulfapyridine was carried higher than is recommended in pneumonia. Hodes, Gimbel, and Burnett¹ recommend from ten to fifteen mg. per cent. They use the sodium salt intravenously when difficulty in securing this level is experienced by oral administration. No intravenous drug was used in this case. It will be noted that the spinal fluid level was checked on May 8, 1940, and found to be 6.2 mg. against a blood level of ten mg. on the same date.

Therapy other than given in the accompanying table was symptomatic in character except for repeated hypodermoclysis to combat the dehydration.

Subjectively the patient has no recollection of her first week of hospitalization. After the first week she complained of headache and a ticking noise in the right ear. Her headaches were so relieved by spinal puncture and drainage that she looked forward to having this procedure done. She was able to walk out of the hospital on the date of discharge. She has remained well since discharge and is in apparent good health with practically normal hearing in the right ear at the present time.

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"Charity is the eminent virtue of the medical profession. Show me the garret or the cellar which its messengers do not penetrate; tell me of the pestilence which its heroes have not braced in their errands of mercy; name to me the—practitioner who is not ready to be the servant of servants in the case of humanity—and whose footsteps you will find in the path of every haunt of stricken humanity.—Oliver Wendell Holmes.

VAGINAL DIPHTHERIA

A CASE REPORT

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Numerous authors have surveyed the literature on vaginal diphtheria in this and other countries. It appears to be an uncommon condition to be diagnosed. Most of the cases so far reported have been clinically sick and ran definite courses to death or recovery. Most were treated with antitoxin. Few cases existed alone without pharyngeal or nasal diphtheria. Statements are made that absorption of toxin is slow from the vagina and that local treatment has little effect. In very few cases was pathogenicity of the organisms reported.

Three cases are here presented that show unusual features as compared with the cases reported. The patients were all in one family and the story is best told in chronological order.

Child A, age eight, was taken suddenly ill one evening after supper. She had previously been well. The onset was heralded by increasing difficulty in breathing and within a few hours had progressed far enough to frighten the mother who called a physician. He suspected laryngeal diphtheria and sent the child to the hospital. On arrival there she was toxic and very dyspneic. Throat smears and culture were taken and 20,000 U. diphtheria antitoxin given in the vein. There was little relief from the toxemia, and none from the dyspnea so about midnight a tracheotomy was done. Her color improved and she became a little more comfortable, but about three a.m. she expired. Post-mortem examination was done next day and a diphtheritic membrane extending from just below the vocal cords to past the bifurcation of the trachea was found. There was evidence of myocarditis and necrosis of the adrenal glands. At this time the throat culture was examined and found to be a pure culture of diphtheria organisms.

The parents, three other children and six relatives who had been in contact with the case were contacted and all given 1500 U. of antitoxin, and throat cultures were taken. At that time the mother remarked that child B, an eight-year-old girl, had a vaginal discharge.

This discharge, she said, was very irritating but had been considerably less so. It had grown much more profuse in the few days preceding the onset of child A's illness. The discharge has been present off and on since early infancy. She has never been sick and she does not menstruate. There have been occasional exacerbations of the discharge, but none so marked as the present one. She had not had diphtheria immunization.

Examination revealed a muco-purulent discharge from the vagina, and on the labia and mons were about a dozen small, discrete ulcerated areas covered with necrotic membrane. The introitus was very red, the hymen was intact but admitted a very small

speculum. The vaginal mucosa was markedly inflamed and discharging muco-pus. The child was otherwise normal. On the next day the throat culture was reported negative, but the vaginal culture which was taken at the time of examination was reported as pure diphtheria culture. Guinea pig inoculation was done and the culture reported as pathogenic.

She was put on local treatment as follows: Three times daily twenty c.c. of peroxide were instilled into the vagina and the child allowed to lie with hips elevated for thirty minutes. Moist boric acid compresses were used continuously to the ulcerations about the vagina. At night a capsule consisting of nine grains of lactose and one grain of citric acid was inserted high into the vagina and allowed to remain. Cultures were taken twice weekly of the vaginal secretions in the morning before treatment. At the end of three weeks the diphtheria had been replaced by a pure culture of staphylococcus. The local lesions had disappeared at the end of one week. After three negative vaginal cultures were secured the child was dismissed from treatment. She was then given a first dose of toxoid, which caused very little reaction, and three weeks later was given a second dose. The parents had steadfastly refused to allow the child to be taken to the hospital, and all treatment was carried out in the home.

One week following the second dose of toxoid a vaginal culture was made, and again it was reported positive. She was placed in the hospital this time and treatment started again. After two weeks, although still with a positive culture, she was allowed to go home, to continue local treatment.

Child C, a female, age six, was brought for examination and proved normal in every respect.

The mother was then examined and although she stated that she had no discharge, vaginal culture was done. This was reported as a pure diphtheria culture; guinea pig inoculation was done and the culture reported as pathogenic. In the history the mother stated that she had had diphtheria as a very young child and her baby brother had died of it at the same time. On further questioning she remembered that she had always had some vaginal discharge. Also, she noticed that when she felt poorly, the discharge was worse, but that after childbirth, for several months the discharge was not present and she felt much better.

Examination of her pelvis was negative except for slight erosion of the anterior lip of the cervix. She has a chronic gall bladder syndrome incidentally. Her throat culture was negative. Throat cultures on all members of the family have persistently been negative. The mother was put on the same local treatment as child B, and after a few weeks culture was reported negative, again with staphylococci as the predominating organism in the vaginal flora.

The family has been followed up to the present (eight months) with interesting results. On several occasions both mother and child B have had positive vaginal cultures, which however were non-pathogenic by guinea-pig inoculation. They have been given local treatment about once a week up to now. One may presume that the organisms now present are diphtheroids, but the possibility that they are attenuated diphtheria organisms is strong.

COMMENT

The treatment has postulated on the known cultural and biological characteristics of the organism. Antitoxin was not used and child B showed no toxic symptoms. It is stated in relation to pharyngeal carriers that antitoxin has no value and that only local treatment is indicated. Shick testing was not done because antitoxin had been given prophylactically and it was thought that this would interfere with the results of the test. It would be interesting to have further studies of vaginal flora with pathogenicity tests of the diphtheroid organisms in a large series of cases.

CONCLUSION

It must be concluded that the mother, and possibly child B, was a healthy vaginal carrier of the diphtheria bacillus. The route of transmission from mother to children can be only a matter of speculation.

RESULTS OF METRAZOL TREATMENT*

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The purpose of this report is to give the results of the treatment of two hundred and fourteen psychotic patients with metrazol, covering a period from December, 1937, to April, 1940. During the early part of this period many chronic cases were treated, while later the majority were of more recent duration.

The cases were not selected except as to physical condition, age and type of psychosis. All available patients were treated in the schizophrenic and manic depressive group except those having undergone marked deterioration. A written permit was obtained from the relatives after the danger and benefits had been explained. A careful physical examination was made, including an x-ray of the chest, before treatment was instituted. Later x-ray was done only when indicated. Cardiovascular disease was a definite contraindication and few patients over fifty years of age were treated.

Treatment was at first given three times weekly, but later changed to twice a week. All treatment was given in the afternoon and the noon meal was omitted. Sedatives were withheld and in some cases

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sodium bicarbonate was given. A ten per cent solution of the drug was used and given intravenously, as rapidly as possible, while the arms were held loosely by an attendant on either side of the bed. The initial dose varied from three c.c. to five c.c. depending on the weight of the patient. At the beginning of the seizures the mouth opens and at this time a mouth gag is inserted, which consists of a rubber door stop wrapped in gauze. If a convulsion did not occur as the result of the first injection within a minute or two an equal amount was again given and in the great majority of cases a seizure resulted. As treatment continued the dosage was gradually increased until a standard dosage was reached which produced a convulsion in that individual. This dosage ranged from six to seventeen c.c., the average about seven and one-half to nine c.c. If a seizure failed to occur at the time of treatment the patient became quite fearful and the mental symptoms were apt to be aggravated temporarily. The immediate reaction consists in most cases of a preliminary cough, followed shortly by the tonic phase with flushing, then by the clonic phase with cyanosis, later by relaxation and pallor. A period of apnea usually follows, which in almost all cases ends spontaneously. As the patient gradually gains consciousness excitement may occur and confusion is marked.

During the seizure numerous pathological reflexes are often observed as dilatation of the pupils, followed by contraction, conjugate deviation, positive Babinski, pilomotor reactions and involuntary emissions. In only one instance was a second convulsion observed in our series, and one patient had a delayed seizure about twelve minutes after administration of the drug.

The complications in this series consisted of three fractures, two of the neck of the femur and the other the neck of the humerus; one case developed broncho-pneumonia which was of short duration, following which treatment was completed; one patient injured the articular surfaces of the mandibulo-temporal joint, from which he has now recovered; and there have been numerous subluxations of the jaw, which were immediately replaced. There have been no fatalities.

The number of treatments has varied greatly; the greatest number given any one patient was fifty-one, the average probably about sixteen. Some cases cleared up after a few injections, and if treatment was discontinued there was in some a tendency to relapse, while in others, where the treatment was continued in spite of the improvement, relapses occurred. However, for the most part the improvement was gradual, especially in the dementia praecox type.

In the manic depressive type the response was more rapid.

In several cases where no improvement occurred during or immediately following treatment there was apparently a delayed reaction in which the patient improved, and in some instances had a complete remission. However, these may have been spontaneous recoveries.

During the first six months the shock method of treatment was used in this hospital, very little psychotherapy was given. Subsequently, however, metrazol treatments were supplemented by this form of treatment. Psychotherapy has consisted in giving greater personal attention to the problems involved in the psychotic break. In some instances, when expedient, bedside conferences were carried on as soon as possible after the metrazol shock. It has been found that often at such times better access could be gained to the psychological difficulties involved in the disease. Such investigations have then been followed up with more extensive private conferences. In other instances only the spontaneous statements and actions of patients have been noted during return to consciousness and then later used as possible points of reference in conference with these patients. In any event the establishment of rapport between patient and therapist seems often facilitated through the circumstances surrounding the shock treatment, and periods of lucidity sometimes following shock have offered good opportunity for constructive work.

Fear² of the treatment is nearly universal. Some of this can be alleviated by words and attitudes of reassurance. Restraint, although at times necessary immediately after the convulsive period, often creates great anxiety and confusion. Despite fear, patients have often expressed willingness to continue treatment on the ground that they were being definitely benefited. Whether fear is a major element in bringing about remission is not certain. One of our patients who had been brought to us in a stuporous condition later stated that after the sixth shot of metrazol he talked, frankly, because he was scared of the metrazol treatment and thought it was about time he talked.

Brevity of time will not permit the enumeration of many psychological observations^{4,5}. Only a few will here be noted. One of the most common statements made by metrazol patients is to the effect that metrazol treatments cause them to become forgetful of the past. One patient complained that his thinking was not as keen and sharp as it used to be. Another patient, a depressed woman, having made unusually rapid recovery, complained that things just did not seem quite right now. Yet these patients and others making similar remarks were actually

gaining in insight and recovery, some of them rapidly. Could one possibly assume that what seemed to them a diminution of their clarity of thought was a rapid fading of their delusional systems to which they had been clinging so tenaciously? Schizophrenia, we know, is preeminently characterized by disorientation. Return to a feeling of orientation seems to be one of the outstanding results of shock treatment. This also holds true for the faculty of speech. Numerous patients, particularly schizophrenics, who had formerly been more or less blocked, have voiced pleasure in their ability to express themselves more freely in a verbal sense after having undergone a course of shock treatment.

Adherence to reality plays an important role in the individual's life. When patients are questioned regarding their first impressions upon emerging from the metrazol treatment they voice, among other things, a happiness in being still alive. Elaborating on this, they say that it is an agreeable feeling to see familiar objects and faces. One patient stated that he was glad he could soon smoke a cigarette. He went on to say that with the first glimpse of consciousness everything seemed confused but presently the room took shape, corners, doors, windows, beds and people took their proper shapes and proportions, this giving him a feeling of well-being. One of the commonest questions of patients upon awakening is "Where am I, who are you?" Recognition of the face comes earlier than that of a name. One often hears the statement, "It seems like a different world." Cohen³ has given an interesting report on the resumption of cognitive functions after shock treatment.

A catatonic girl volunteered that whereas she used to be entirely preoccupied with her own thoughts and ideas to the point of considering them of greatest importance, she was now beginning to "pay attention" more to things and people around her. Another catatonic woman, who had been in stupor for a number of weeks, upon awakening from metrazol suddenly began to point out, and name with considerable elation the objects she saw around her: "Windows, trees, picture on the wall, snapshot on the wall, round ice cream box, the nurse, girl in the next bed, towel," etc., etc. Even when patients do not display marked behavior of this kind, it is not infrequent that one observes them in an exploratory frame of action of a visual, manual and auditory nature, hereby giving a possible clue that may lead us to a further understanding of the problem in question.

It has been exceedingly difficult to determine the number of seizures each patient should be given. In some instances in depressions there would be rapid improvement and if therapy was continued for a

short time, there would be a tendency for them to become hyperactive, almost bordering on a manic phase. It has also been observed on several occasions in the manic type that there would be a definite improvement after a very few seizures, then if treatment was continued they would become very confused, with loss of memory. However, practically all of these cases recovered after metrazol was discontinued for a few weeks. As before noted, loss of memory has been a rather consistent post-metrazol finding. This appears to be only temporary.

In a few cases there has been a tendency for fairly rapid improvement followed by immediate relapses when treatment was discontinued, and again followed by remissions after a few convulsions. This would continue until several courses of treatment were given. Two cases are perhaps noteworthy:

Case I. This patient was a white girl, twenty years of age, a case of acute schizophrenia. She was excited, talkative, and uncooperative. After the first few treatments she showed but little change in her actions and behavior. After about the seventh metrazol treatment she began to show some improvement a day or two following seizures but before the next treatment was given would lapse back into her former condition. However, after two or three such reactions she sustained her improvement, and was able to be dressed and got along well on the ward. The treatment was then discontinued but she soon lapsed back into her former condition. Treatment was again instituted until she had thirty convulsions, at which time her condition again was fairly satisfactory, being up and dressed, cooperative, but showing little insight. However, about ten days after treatment had been discontinued she again lapsed back into her former state, being confused, excited, negativistic and delusional. She again received a short course of metrazol, having a total of three convulsions at this time. She again improved and was paroled home, and from recent reports is getting along satisfactorily.

Case II. The second patient was a thirty-six-year-old white female, in an agitated depression. Her improvement was slow with convulsive therapy and she received twenty-three treatments in the first series. She improved temporarily but again became depressed and agitated. She was then given another series of nine convulsions which again was followed by temporary improvement. This was continued until she had received four separate series of treatments, consisting of a total of thirty-eight seizures. During her last remission she was paroled home and apparently is well up to the present time.

RESULTS

We have graded our results into four groups, as noted in Table No. 1. The cases in Groups A and B represent either full remission or recoveries to the extent of home parole. Of a total of 214 patients treated 112 were in this group, representing 52.3 per cent. This, of course, represents cases of both long and short duration. These were then subdivided into type of psychosis and duration. Less than one

year was considered early and more than one year's duration was considered old. According to this classification there was 73.3 per cent remission in the early cases and only 29.5 per cent remission in the late cases. The per cent was raised some in the late group due to the comparatively favorable response of the old cases of depression. This is evident by the following data: Eighty-six per cent of the early manic depressive patients responded favorably and fifty per cent of the late cases, while in the schizophrenic groups sixty per cent of the early cases responded as compared to twenty per cent in the late group^{1,6,7}. Patients that relapsed were classified with the failures. We have had four patients to return after a parole home. They likewise were recorded as failures.

TABLE No. 1

Diagnosis		Duration	No. Cases	Results			
				A	B	C	D
Manics	Over 1 yr.	7	7	12	1	1	5
	Less	23	12	7	7	3	1
Depressions	Over 1 yr.	21	7	6	5	3	3
	Less	28	18	7	3		
Schizophrenia	Over 1 yr.	9	1	1	1	6	
	Less	8	3	2	2	1	
Hebephrenics	Over 1 yr.	48	3	8	6	31	
	Less	38	11	13	9	5	
Schizophrenia	Over 1 yr.	15	1	1	3	11	
	Less	6	1	4		1	
Paranoid	Over 1 yr.	3	1	1	1		
	Less	4		3	1		
Psychoneurosis	Over 1 yr.	2		1		1	
	Less	2			1	1	
Totals			214	57	55	36	66

A—Complete remission
B—Good recovery, eligible for parole
C—Some improvement
D—No improvement

We have further summarized our total group into three series, representing three periods of treatment, (Table 2.) This we did in order to determine whether over a longer period of time improvement of results could be realized under our given conditions. The first series covers the first six months treatment was given, the second series the second six months, and the third series represents about the last year. The first two series were equally divided in numbers whereas the third series was as large as the first two combined.

TABLE No. 2

Showing series comparisons of all cases, old and early.

Series 1 Were Old Cases			
A	B	C	D
21.8%	16.3%	16.3%	45.4%
38% A + B			
Series 2 Were Old Cases			
A	B	C	D
36.3%	16.4%	18%	29.3%
52.7% A + B			

Series 3 Were Old Cases			
A	B	C	D
25.3%	35.3%	14.1%	25.3%
60.6% A + B			
Summary of Series Comparisons of Early Cases			
Series 1			
A	B	C	D
35%	25%	15%	25%
60% A + B			
Series 2			
A	B	C	D
59.4%	15.6%	18.7%	6.3%
75% A + B			
Series 3			
A	B	C	D
37.7%	43.4%	13.2%	5.7%
81.1% A + B			

As noted in the tale, the number of A's and B's combined increased progressively from the first to the last series, even when only new or early patients were considered. This may possibly be accounted for by the fact that more intensive psychotherapy has been given the later groups. Also there may have been better selection of cases or improved technique. The exact factors and variables involved in the differences need further study. No complications have occurred for the past year, which includes all of the third series.

Considering all groups, the best results were obtained in the manic depressive class, and especially in the depressed individuals. The duration of the psychosis did not seem as important in the manic-depressives as in the schizophrenic group.

The results were especially poor in the schizophrenics of over a year's duration, while the percentage of recoveries and improvement was definitely better in the cases of recent duration. Our results with the paranoid type, especially the old cases, have been discouraging, although the number treated has not been great.

CONCLUSION

- 1. Although metrazol was first introduced as a treatment for schizophrenia, the best results have been obtained in the manic depressive group.
- 2. In the schizophrenic group the duration of the psychosis is important, as there is a very low recovery rate in the old cases.
- 3. Psychotherapy is a valuable supplementary aid to the convulsive treatment.

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THE PROBLEM OF THE PREMATURE BABY IN KANSAS

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A study of the causes of death of children less than one year of age, in Kansas, for the twenty-five year period 1914-1938, revealed the fact that prematurity accounts for a large per cent of such deaths, in each of the five-year periods studied. (Table No. 1.)

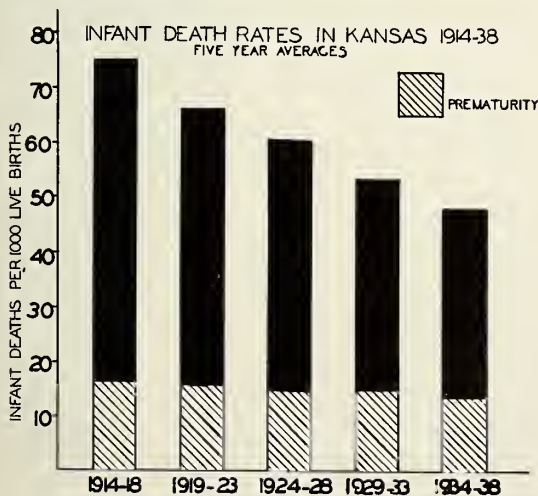
TABLE I

Deaths Due to Prematurity in Kansas 1914-1938

Five-year Period	Per Cent of Infant Deaths Due to Prematurity
1914-1918.....	23%
1919-1923.....	26%
1924-1928.....	27%
1929-1933.....	31%
1934-1938.....	32%

Further analysis showed that the infant death rate due to prematurity has not decreased materially during this twenty-five year period, whereas the general infant death rate has decreased from seventy-four per 1,000 live births in the five-year period, 1914-1918, to forty-seven per 1,000 live births in the five-year period, 1934-1938.

It is generally believed that the three most im-



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portant factors in saving the lives of prematurely born infants are:

1. The maintenance of normal body temperature.
2. Adequate nutrition.
3. Prevention of infection.

Hoping to discover whether there were adequate facilities in the state to meet the first requirement properly; that is, the maintenance of normal body temperature, a survey of the hospitals was made to discover the number and location of incubators for premature babies. This survey showed there were twenty-seven home-made incubators, thirty-six incubators of commercial type, and one air conditioned nursery in the state. These facilities were found in thirty-four counties, leaving seventy-one counties without adequate facilities to care for premature babies.

During the eighteen months following the survey, the Kansas State Board of Health purchased eighteen electrically operated incubators and sixty-eight incubators operated by means of hot water. The eighteen electric incubators operate on 110-volt alternating current, and the temperature is automatically controlled. The sixty-eight hot water incubators are heated by means of fruit jars containing hot water, which are placed in a compartment beneath the bassinets. These incubators were placed in the areas of the state, where the greatest need appeared to exist, and with the understanding that they were to be freely available to any physician needing this type of service. When the distribution had been completed, each county of the state had at least one incubator. A list of the locations and custodians follows.

INCUBATORS FOR PREMATURE BABIES

ELECTRICALLY OPERATED

Location	Custodian
Colby.....	Geo. Marshall, M.D., County Health Officer
Oberlin.....	Mary Catherine Downey, R.N., County P.H. Nurse
Hill City.....	Barbara Ladd Smith, R.N., County P.H. Nurse
Smith Center.....	.....Smith Center Hospital
Oakley.....	Edith Stanforth, R.N., County P.H. Nurse
Tribune.....	D. J. Wilson, M.D., County Health Officer
Ulysses.....	Helen Nelson, R.N., County P.H. Nurse
Dodge City.....	.....St. Anthony's Hospital
Coldwater.....	Ruth Botts, R.N., County P.H. Nurse
Pratt.....	.....County Medical Society
Lyons.....	Mabel Hammerlund, R.N., County P.H. Nurse
Waterville.....	G. I. Thacher, M.D.
Hiawatha.....	R. T. Nichols, M.D.
Wichita.....	Henry H. Asher, M.D., County Health Officer
El Dorado.....	Roy Weathered, M.D., County Health Officer
Yates Center.....	Geo. R. Lee, M.D., County Health Officer
Independence.....	.....Mercy Hospital
Columbus.....	J. W. Spearing, M.D., County Health Officer

HOT WATER INCUBATORS

Location	Custodian
St. Francis.....	Mildred Williams, R.N., County P.H. Nurse
Goodland.....	Pauline Gerstner, R.N., County P.H. Nurse
Oberlin.....	Mary C. Downey, R.N., County P.H. Nurse
Hill City.....	Barbara Ladd Smith, R.N., County P.H. Nurse

Oakley.....	Edith Stanforth, R.N., County P.H. Nurse
Hoxie.....	Julie Colvin, R.N., County P.H. Nurse
Ulysses.....	Helen Nelson, R.N., County P.H. Nurse
Cimarron.....	Dorothy Noell, R.N., County P.H. Nurse
Dodge City.....	Hope Blackburn, R.N., County P.H. Nurse
Kinsley.....	Sarah Zeller, R.N., County P.H. Nurse
Greensburg.....	C. D. Updegraff, M.D., County Health Officer
Coldwater.....	Ruth Botts, R.N., County P.H. Nurse
Grainfield.....	Ethel Wilkins, R.N., County P.H. Nurse
Wakeeney.....	Irene Mentlick, R.N., County P.H. Nurse
Johnson.....	Hazel Ross, R.N., County P.H. Nurse
Syracuse.....	Hazel Ross, R.N., County P.H. Nurse
Emporia.....	C. H. Munger, M.D., County Health Officer
Yates Center.....	Geo. R. Lee, M.D., County Health Officer
Columbus.....	J. W. Spearing, M.D., County Health Officer
Marion.....	John W. Turner, M.D., County Health Officer
Sublette.....	Marion Cross, R.N., County P.H. Nurse
Atwood.....	E. T. Gertson, M.D., County Health Officer
Sharon Springs.....	W. W. Carter, M.D., County Health Officer
Leoti.....	L. S. S. Ott, M.D., County Health Officer
Dighton.....	Edwin P. Deal, M.D., County Health Officer
Almena.....	T. F. Brennan, M.D., County Health Officer
Lakin.....	G. R. Hastings, M.D., County Health Officer
Lincoln.....	H. L. Songer, M.D., County Health Officer
Meade.....	Gladys Hester, R.N., County P.H. Nurse
Hugoton.....	Lily Heinze Schreock, R.N., County P.H. Nurse
Lyons.....	Mabel Hammerlund, R.N., County P.H. Nurse
Olathe.....	Hazel Dobbs, R.N., County P.H. Nurse
St. John.....	J. C. Ulrey, M.D., County Health Officer
Medicine Lodge.....	Hardin Gilbert, M.D., County Health Officer
Anthony.....	C. A. Dieter, M.D., County Health Officer
Wellington.....	L. A. Sarchett, M.D., County Health Officer
Soldier.....	Mayer Shoyer, M.D., County Health Officer
Council Grove.....	H. B. Melchert Hospital
Lyndon.....	C. W. Beasley, M.D., County Health Officer
Cottonwood Falls.....	A. E. Titus, M.D., County Health Officer
Fort Scott.....	W. S. Gooch, M.D., County Health Officer
Jetmore.....	C. B. Wycoff, M.D.
Phillipsburg.....	Phillips County Medical Society
Washington.....	Washington County Medical Society
Elkhart.....	F. H. Buckmaster, M.D., County Health Officer
Ashland.....	W. H. Jones, M.D., County Health Officer
Belleville.....	P. L. Beiderwell, M.D., County Health Officer
Portis.....	Jas. W. Cross, M.D., County Health Officer
Luray.....	H. S. Dreher, M.D., County Health Officer
Minneapolis.....	Edw. J. Haerle, M.D., County Health Officer
Bison.....	N. W. Robison, M.D., County Health Officer
Larned.....	C. M. Starr, M.D., County Health Officer
Severy.....	S. F. McDonald, M.D., County Health Officer
Troy.....	C. E. Waller, M.D., County Health Officer
Esbon.....	S. B. Dykes, M.D., County Health Officer
Hiawatha.....	R. T. Nichols, M.D.
Wamego.....	Pottawatomie County Medical Society
Atchison.....	Atchison County Medical Society
Valley Falls.....	Jefferson County Medical Society
Leavenworth.....	Jefferson County Medical Society
Burlington.....	Coffey County Medical Society
Howard.....	Elk County Medical Society
Fredonia.....	Wilson County Medical Society
Sedan.....	Chautauqua County Medical Society
Stockton.....	Rooks County Medical Society
Alma.....	A. A. Meyers, M.D., County Health Officer
Mound City.....	L. D. Mills, M.D., County Health Officer
Paola.....	P. A. Pettit, M.D., County Health Officer

It is hoped that this service may be of some assistance to physicians of the state in reducing infant deaths due to premature birth.

TREATMENT OF CEREBRAL PALSY (SPASTIC PARALYSIS)

M. E. Pusitz, M.D.

Topeka, Kansas

Etiology is not being considered, but the following facts should be made clear. Obstetricians have been too often unjustly blamed for a condition for which they have been entirely NOT responsible. Poor obstetrics does play a role, but only in the minority of cases. By far the vast majority are produced by causes which cannot be prevented at all. Therefore the term "birth palsy" is erroneous, unless it has reference to that condition involving the brachial plexus at birth, called obstetrical palsy. For complete and comprehensive information as to etiology the reader is referred to the excellent contributions of Ford, Heyman, Pusitz, Schrieber, and others.

Reference was made that in the majority of cases of cerebral palsy, the cause cannot be prevented. Therefore, there will always be a certain number of cases present in the community, year in and year out, depending, of course, on the number of deliveries. In a careful survey, I found that the number of cases of cerebral palsy exceeded that of infantile paralysis, except in years of epidemic infantile paralysis (as in this year). Phelps, in a rather scientific survey (in the East) found that the incidence was roughly about 140 cases per hundred thousand of population (the cases being under twenty-years of age). This at once indicates the importance of the problem from a socio-economic point of view.

Too frequently there has been misunderstanding of the term "cerebral palsy". In the earlier contributions, there was the tendency to group motor defective cases into two categories; those due to lesions of the lower motor neurone were flaccid paralyses, and those due to upper motor neurone lesion were spastic paralyses. Under the term "spastic paralysis" there were grouped a large number of different conditions, which were unrelated as far as spasticity was concerned. Although the earlier investigators realized the limitations of the term, and described athetoid and ataxic disturbances, it was not until the splendid work of Phelps that accurate differentiation was made. It may now be stated that under the term cerebral palsy are included a number of allied conditions, which present the attributes of spasticity, athetosis, ataxia, tremor, proprioceptive instability, etc. While these attributes may occur as pure syndromes, in by far the majority of cases, there is an admixture of these, al-

though one or other attribute may be more prominent, clinically. Spasticity is by far the commonest sign encountered.

A careful classification or differentiation of cases is important since the exact *modus operandi* in treatment depends upon it. However, there is a basic principle in the handling of the group, as a whole. It must be realized that we are concerned with the treatment of a motor defective child, whose mental status may be influenced by the motor handicap. This does not include idiotic cases, with or without motor defect. These have been thrown into this group by the profession without realizing it.

In the early history of this field, (and it must be realized that the condition was only first clearly defined in 1862), the work was mainly carried on by neurologists and pathologists, who were concerned mainly with etiology and pathological histology. As a result, a very pessimistic outlook was given to treatment. Gower's text book, in 1892, discouraged any form of treatment. Even to this very day, this pessimism and antagonism permeates medical research, so that there are only a handful of clinics in the entire country where complete treatment is being instituted. However, the profession, and crippled children agencies, are becoming interested. The manifold problems connected with each individual case are being realized—so that no longer does a positive encephalogram mean that the child is denied treatment, nor does a negative encephalogram mean success. It is a question of the summation of the potentialities present in the C. N. S. which counts, as far as progress is concerned. Careful consideration of these factors will enable the family physician to refer the child to proper channels, and prevent the robbing of an unfortunate individual of his only chance for "freedom", or falling into the hands of the quack and charlatan.

The development of a routine in the treatment of these cases is the keynote in successful therapy—yet this is not new. About fifty years ago, Robert Jones stated, "It will be gathered from my remarks that I wish to urge that the treatment of spastic paralysis should resolve itself into a system. Such a system involves operative, mechanical and educational stages. The treatment cannot be separated into parts."

This satisfactory development lasted for some years, in which the interest in the condition shifted from the neurologist to the orthopaedic surgeon. But this routine was slow, methodical, and non-heroic. The orthopaedic specialist was rapidly becoming a surgeon, primarily, and there was not as

yet the development of the fields of physiotherapy, muscle-education, occupational therapy, speech correction, etc., such as we have today. What was being sought was a short cut. The contributions which were made were excellent for the particular thing it had been invented. But too much emphasis was being placed upon an actual surgical procedure, and not enough upon the pre- and the post-operative routine—the "system" of Sir Robert. Small wonder then that the results were disappointing. There were so many brilliant results to be obtained by surgery in the fields of infantile paralysis, traumatic surgery, osteomyelitis, etc., that it was not enticing for the orthopaedic surgeon to remain too much concerned with "spastic paralysis".

Could Whitman still state, "Cerebral paralysis or palsy is in orthopaedic practice second only in frequency and importance to anterior poliomyelitis."? The everpresent tendency to seek some measure (with surgery, or with curare) with which the condition could be controlled "with one stroke" has hampered the progress made in this field, but yet there have been contributions which have elevated the field to a higher plane than ever before.

There has always been a tendency to consider all of these cases as idiots or of low mentalities, and particularly was this true of Gower's time. In 1935, Stevenson stated, "The one well known disease of the pyramidal tracts with little or no mental defect is Little's Disease." My own studies on a large group of unselected cases were that fifty per cent were of normal intelligence, five per cent were exceptionally bright, ten per cent or less were idiots or low morons, the rest being substandard or high moron individuals. It is interesting that the more recent and more complete survey made by Phelps gives good mental ability in 68.8 per cent of the cases he studied, thus producing similar figures to my own.

All through the work, it has been recognized that it is essential that the mentality be sufficient in order to make progress in the treatment of these cases. It remains for the neuro-psychiatrist to work out a useful method of measuring their intelligence, since this cannot be done with the ordinary methods of intelligence testing. Unless there are other stigmata, it is dangerous to prognosticate low intelligence in these cases until the second year of life. On the other hand, it is also dangerous to predict good mentality, particularly in the new born. Ford, Crothers, and Putnam cite the case of two babies born in the maternity wards of J. Whitridge Williams, who showed all the reactions of normal babies, including crying, nursing, and vigorous movements, who were found at necropsy to have

been born without cerebral hemispheres. They believe that the cortex plays no part in the normal activities of new born babies; but rather that these are reflexes mediated through the brain stem and spinal cord. It must be remembered that these cases have, from the very beginning, to cope with difficulties that the normal child knows nothing about. All these factors must be taken into consideration, as well as the motor defect, in the evaluation of the intelligence quotient.

The more recent trend back to the concept of Sir Robert Jones, of fifty years ago, has been due to the work of only a very few investigators, in various parts of the country. The work has been materially enhanced with the interest taken by the fields of physiotherapy, muscle education and re-education, occupational therapy, speech correction, etc. Phelps has probably done more than any one else to place the routine of treatment on a definite and standard basis. His classification and differentiation has been the starting point.

Phelps, Pusitz, and others have stressed muscle education, as the keynote in the routine, with other measures like surgery, curare, etc., as adjuncts. They have not neglected the neuropsychiatric approach, as is evident from their reports. Carlson, a neuropsychiatrist, has contributed to the concept that there has been too much stress placed upon physical development, and not enough on mental and educational development, in the treatment of these cases. He has pointed out that the spastic must be given a feeling of personal worth, before all these measures described can be of the greatest benefit in rehabilitation (this is a poor term). I have always felt that physical development was the keynote since we are essentially dealing with a motor defective child. What good would it be to produce a Ph.D. with a most brilliant background, if the patient could not make use of this training physically. It is true that there are mental aberrations and handicaps, but these are side issues. There is, however, very necessary a psychological approach in the handling of these patients since there are these mental deadlocks and handicaps, as a result of the physical barriers, as well as the environment of the child.

Phelps practices segregation of cases, and has a boarding hospital school for spastics, where a most complete routine, including education, is practiced. In 1932, Carlson developed a school for these cases, in the Neurological Institute of New York, which is run in conjunction with the Board of Education of New York City. In Kansas, such a school can only be for the future, certainly not the present, because of our smaller communities, and the lack of

available funds. However, our own work has shown that a great deal can be done without these special units. Segregation of these cases, to prevent the development of mental deadlocks and barriers during the pre-school years, can still be practiced. This is done by means of out-patient clinics, which are the important center, and hospitals for the surgical and curare therapy. Whereas it would be a gigantic task to train nurses or parents to treat all cases, it is feasible, and I have found it very effective, to instruct a nurse or a parent in the treatment of a particular case. In this, however, there must be complete cooperation. Too frequently outside interference has resulted in the complete downfall of a routine of treatment of a particular case. Periodic check up must be performed by the neuromuscular specialist himself to obtain the best results. This is possible no matter how far away the patient may reside—peculiarly enough some of our best cases were those that had to travel hundreds of miles to our clinic.

Carlson stresses the segregation of these cases, during the school years. My own conviction is that this has advantages and disadvantages. The time to segregate these cases is in the pre-school period. This is a very vulnerable period, during which many mental behavior patterns are established. Moreover, there is a timing tendency in spastics as well as normals, so that they tend to learn to walk at a certain age, to talk at a certain age, etc. The longer this is delayed, the more difficult it is to develop these attributes later. Not only because of more difficulty in creating coordinated muscle function, but because these children develop improper modes of progression or action, in just the same way as a swimmer may learn incorrect strokes. It is much more difficult to teach the older individual the correct swimming strokes, since he has to unlearn all the incorrect ones. Another factor is that no matter how well the patient may get along in the special class, sooner or later he must go out into the world, and when he does he usually falls to pieces. If during this preliminary period, he were gradually subjected to the external environment, he could learn to cope with these problems, and become immunized to them. The pre-school period, in these spastic athetoids, is not until they reach the age of five, but seven or eight, or nine, depending upon the individual case, since their development cannot be as rapid as the normal, because of physiological limits to their progress. But sooner or later, they should be encouraged to "go to school".

Throughout the country, although sparsely, there have developed special schools, or clinics, or out-patient departments for these cases. During the last

year or so, the International Crippled Children Society has made investigation of these possibilities, and has gathered together much data. There is no doubt but that the future will hold more for the development of these spastic athetoids than ever before, and that this will become widespread.

CONCLUSIONS

There are no short cuts in the treatment of this condition. Since there is no possibility of regenerating dead nerve tissues, it is not a question of cure, but rather of palliation, endeavoring to produce coordinated muscle action so as to induce function. The treatment does not consist of any one particular item, but rather it must be considered as a routine of treatment (or a system of treatment as advocated by Robert Jones fifty years ago). In this, there is no heroic, no breath-taking procedure, but rather it is a slow methodical, and gradual process, in which many items, and from different fields, are required. The physician must develop a working hypothesis of coordinated muscle action, so that a well rounded routine of muscle education can be instituted. This must form the nucleus about which all the work evolves. Surgery, or neuro-surgery, as one, is not the treatment, but as adjuncts, they may be of inestimable value. Psychology or rather neuropsychiatry has a great deal to offer, but it has reference more with the approach to the spastic athetoid case, than to the actual treatment itself. Without it, however, the routine will suffer severely. We must avail ourselves of the wonderful opportunities we now have in the fields of speech correction, physiotherapy, muscle education, gymnastics, occupational therapy, etc. . . . But we must not lose sight of the fact that in order for these fields to give maximum results (without any tendency to exaggeration of their value), they must be controlled by the doctor who is well versed in the condition which is being treated. Educational and vocational guidance must be harnessed in this routine, so as to achieve the maximum results from therapy; although this objective will probably not be reached for some time.

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SPINAL INJURY (BULLET WOUND) ROLE OF EPIDURAL FAT IN PRODUCING NEURAL SYMPTOMS

REPORT OF TWO CASES

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Spinal injuries, followed by loss of motion, sensation and visceral function, usually present serious problems for diagnosis and treatment. This is especially true in case of direct traumatism and in injuries of long standing.

This report is intended to demonstrate a certain amount of benefit which was obtained by two patients who had been disabled by bullet wounds of the spine. The clinical course in the two cases was in some respects similar; in other respects strikingly different.

The fundamental problem in both instances was

the significance which was to be attached to the influence of epidural fat tissue, as a factor in producing dysfunction of the spinal nerves. This tissue is believed to be related to several clinical conditions, in the sense that it may produce a mechanical irritation of the nerves within the spinal canal^{1,2,3}. Although it is considered a normal content of the epidural space, it has been found to undergo a variety of pathologic changes as fibrosis, inflammation and calcification. Coincident with, or following these alterations in the fat tissue, there is an encroachment on the nerves with which the fat and fibrous masses are in contact, and thus there results a variable amount of irritation of the nerve roots, intraspinaly. The clinical manifestations from the effects of this irritation depend on the location and the extent of the involvement and the function of the nerves which are affected. Evidence of the action of such abnormalities is the relief of symptoms which follows surgical removal of these structures.

CASE REPORTS

Case 1. F.M., white female, age eighteen, entered the hospital in July 1937. Two years previously she was accidentally shot with a bullet from a .44 caliber revolver. The bullet, fired at close range, entered the lower part of the chest on the right anteriorly, coursed backward and lodged under the skin, immediately to the left of the midline at the level of the twelfth dorsal vertebra. The bullet was removed several hours after the injury and, at the same time, some shattered fragments of bone were removed from the spine at that level. The exact extent of the injury was not determined at the time, although the dura was known to be torn and probably the lower portion of the cord was damaged. After recovery from the immediate effects of the injury, there was complete loss of motor power and sensation in the lower part of the abdomen and back and the lower extremities. During the first six months after injury there was an incomplete restoration of sensation and also a slight recovery of motor power. Urinary and fecal incontinence resulted and persisted without much change.

From the time of the injury she had sharp pains referred to the legs and feet. During cold weather or on change of weather, she had constant severe pain of a dull aching character in both knees.

Due to muscle weakness of the back and lower extremities, the patient was confined to bed practically all the time. About six months previous to admission, trophic ulcers developed over the left buttock and the coccygeal region. Since that time there was noticeable a rapid decline in health, manifested by loss of appetite, anemia, loss of weight and a profound psychic depression.

Examination was unsatisfactory due to lack of co-operation on the part of the patient. Her mental attitude was plainly one of despair. Except for anemia and emaciation, nothing of importance was found on general examination.

Motor power in the lower extremities was completely lost except a fair degree of abduction and

flexion of the left hip. There was also a marked loss of power in the muscles of the lower part of the abdomen and back, noted in efforts to turn or shift her position in bed. A flexion contracture of forty degrees was present in each knee and both feet were contracted in a position of equino-varus.

Sensation was apparently normal in the thighs and there was complete sensory loss in the legs. This consisted of anesthesia to ordinary stimuli as touch, pain, temperature and pressure. It was of the "glove and stocking" type, the level of demarcation being on the right immediately below the knee joint and on the left approximately three inches below the knee joint.

Two ulcers were noted—one on the left buttock and the other over the coccyx. Both were typical decubitus ulcers, showing little tendency to heal and involving the entire thickness of the skin and subcutaneous tissues.

Roentgenographic examination showed that the spinous process and the upper half of the lamina of the twelfth dorsal segment had been removed. In the lateral view there was no indication of destruction of the pedicle, such as might be expected from the course of the bullet. In both views, numerous small shadows of the fragments of the bullet were visible. These were situated in the subcutaneous tissues or muscles of that area and apparently none were located in the spinal canal.

Urine examination showed albumin, one-plus, a few red blood cells and a few bacteria.

This condition presented many features of an incomplete lesion of the cord and nerves and yet was sufficiently extensive and well advanced that it offered little hope for improvement. The treatment which was instituted was undertaken largely at the insistence of the patient's mother. The operation was planned as an exploratory procedure, for whatever benefit might be obtainable.

Operation, July 13, 1937, consisted of removal of the first lumbar laminae and the remains of the twelfth dorsal laminae. Under each of these, the epidural fat was found to be interwoven with numerous strands of fibrous tissue. This fibro-adipose tissue was removed as completely as possible. Between the remnants of the twelfth dorsal laminae and the dura was a dense fibrous adhesion which was severed. In the upper part of this segment, the site of the injury, the dura was firmly adherent to the dorsal wall of the canal and it seemed useless to attempt any reparative work.

The report by Dr. C. A. Hellwig on the histologic appearance of the tissue was as follows: "The fat tissue is invaded by strands of cellular fibrous tissue. Many granules of hemosiderin are found."

Post-operative course. No important changes were noted immediately after operation. In the course of five weeks there was a gain in muscle power of the hips and the knees. The flexion contracture of the knees was corrected to twenty degrees. There was also a distinct improvement in the function of the bladder and bowels. Pain in the left knee was practically eliminated. Urine findings were unchanged.

During the next four or five months there was a gradual increase in power of the muscles of the hips and knees and lower part of the back. The function of the bladder and bowels was maintained in its improved state. The trophic ulcer over the coccyx was

healed and the ulcer in the left gluteal region had become smaller.

Motor power of the muscles in January 1938 was estimated as follows:

There was no muscle action in either foot.

Right knee: extension, poor; flexion, none.

Left knee: extension and flexion, good.

Right hip: flexion and abduction, fair; extension and adduction, none.

Left hip: flexion, good; extension, adduction and abduction, fair.

Urine examination on January 6, 1938 showed: albumin, one-plus; sugar, trace; indican, two-plus; many pus cells and bacteria.

Her condition, at this time, though definitely better since the operation, still represented considerable disability and she was anxious for further improvement if that were possible. It seemed reasonable to believe that the pathologic process in the spinal canal was more extensive than it was seen to be at the first operation and that therefore, it was responsible for some of the remaining symptoms. Accordingly another operation was advised.

Operation, January 7, 1938, consisted of removal of the laminae of the second and third lumbar vertebrae. The epidural fat contained numerous fibrous tissue strands and was in many respects similar to that seen at the first operation. The fat and fibrous tissue were removed as far as possible.

The tissue, on microscopic examination by Dr. C. A. Hellwig, showed "many small fibrous areas, many deposits of brown pigment and no inflammatory changes."

The results of this operation were a moderate diminution of pain in the right knee and an improved muscle action of the left knee, enabling her to correct the flexion contracture completely, without any further treatment. Further, the urine examination at intervals during the next year, showed no albumin and a marked improvement in the pyuria and hematuria.

In June 1938, while at home, an abscess developed over the coccygeal region. This opened spontaneously and a large amount of pus escaped, together with several fragments of bone. The opening remained as a large ulcer, extending to the sacrum. Formation of the abscess was accompanied by a rapid decline in health, manifested by anemia, emaciation and weakness. When she was seen in September 1938, she stated that she was too weak to attempt much physical activity. A large trophic ulcer extended to the coccyx and the sacrum and, in the roentgenogram, a destructive process involving both of these bones was visible. Her morale was favorable for recovery.

In December 1938, she stated that she had very little discomfort. Muscle function of the back and lower extremities was sufficient to enable her to sit in wheel chair most of the daytime. The flexion contracture of the left knee was estimated at ten degrees, that of the right knee at twenty degrees. Sensation was unchanged from the condition noted at the first examination. Bladder and bowel function were "practically normal." The decubitus ulcers were smaller and showed a tendency to heal.

In December 1939, her physician reported that she was gradually improving and that she had learned to perform various household duties by using a wheel chair.

Comment. The net gain in the patient's condition,

approximately two and one-half years after treatment was begun, consisted of relief from pain, reestablishment of sphincter control of bladder and bowel, correction of albuminuria, improvement in pyuria and hematuria and partial restoration of motor function. In view of the extent and the nature of the original damage and the generally recognized gravity of this type of injury, the prognosis is uncertain.

Case 2. E.C., white female, age twenty years, was admitted to the hospital on September 4, 1937. Two years previously, while handling a .22 caliber rifle, she was accidentally shot, the bullet entering the right side of the abdomen and lodging in her back. This caused an injury to the spine and an immediate paralysis and loss of sensation in the lower extremities and lower back. An operation, performed elsewhere, consisted of removal of the bullet together with some fragments of bone from the spine which had been injured at the level of the second lumbar vertebra. There has, since then, been a partial recovery of motion and sensation in her lower limbs. She has had constant pain in her feet, more severe during a change in weather. Due to weakness, she has spent most of the time in bed and is able to sit up for only an hour at a time. Urination and defecation are difficult and require an abnormal amount of straining. Since the injury, menstruation has been accompanied by intense cramp-like pain which lasts for two or three days of every period.

Examination: Is unable to walk. Has very little muscle power in lower back. No tenderness of spine. The right thigh shows atrophy of one inch. The legs are equal in circumference.

Muscle action was present as follows:

Right hip: No flexion or extension; adduction and abduction, poor.

Left hip: All movements present but weak.

Right knee: No action in flexion or extension.

Left knee: Extension and flexion, poor.

Right foot: Weak flexion and extension of toes; no other action.

Left foot: Fair extension and flexion of toes; no other action.

Muscle tenderness was elicited in the right quadriceps extensor, gastrocnemius, and tibialis posterior, and the left tensor fasciae latae.

Sensation of the skin to touch, pain and pressure was disturbed on both sides, though not symmetrically. On the left, these sensations were normal above the knee, diminished between the knee and ankle, and absent below the ankle. On the right, sensation was normal above the ankle and diminished below that level. Sensory disturbance, in its distribution, was sharply delineated and was of the "glove and stocking" type.

The feet were cold and perspired freely. Tendon reflexes were absent. The right knee was contracted at thirty-five to forty degrees.

Roentgenographic examination showed that the laminae of the second lumbar segment had been removed. Small flakes of material, evidently fragments of the bullet, were scattered about in the tissues. In the lateral view, no destruction was seen in the pedicles.

Urine examination showed many pus cells.

Analysis of the findings indicated that, while there was an extensive involvement of the nervous elements, it was probably not a complete lesion of the cauda.

Many of the features which were noted left the impression that the nervous phenomena were the result of an irritative process. On this interpretation of the findings and on the basis of experiences with case one, an exploratory operation was advised.

Operation, September 10, 1937, consisted of a laminectomy of the twelfth dorsal and first lumbar segments. On the ventral surface of the twelfth dorsal laminae, several strands of fibrous tissue were attached and from there extended forward into the anterior part of the canal. These were under tension and were severed. At the lower half of the laminae, was a mass of epidural fat overlying the dura. Under the laminae of the first lumbar vertebra, several dense adhesions, extending between the bone and the dura, were severed. Under the remnants of the laminae of the second lumbar segment, the dura was adherent to the laminae by very heavy fibrous tissue. It seemed useless to attempt removal of these and they were left intact.

Examination of the tissue by Dr. C. A. Hellwig showed that "microscopically, the specimen consists of fat tissue. There are some fibrous areas with lymphocytic infiltration and deposits of brown blood pigment."

Following operation, several changes were noted in her condition. The pain in her feet was diminished in intensity and for a period of four weeks was entirely eliminated. Later there was a recurrence of the pain in mild form, not constant or severe and confined to the big toe in each foot. This pain has remained since the operation and represents very little discomfort.

Pressure tenderness in the muscles was eliminated and has not recurred.

Sensation to ordinary stimuli was improved in the legs and feet, though it is still subnormal. Most important in that respect is the recovery of deep pressure sense in the left foot to aid her in walking.

There was a definite improvement in the function of the bladder and no change in bowel function. Menstrual pain was not altered.

Motor function of the muscles was unchanged for approximately two months. After that time there was a noticeable improvement in the power of many of the paralyzed muscles in the back and lower extremities. Three months after operation she began to bear weight and, with the aid of crutches, was able to walk without any further assistance. The contracture of the right knee was diminished to fifteen to twenty degrees without treatment.

Muscle power was estimated on December 2, 1937, as follows:

Right hip: flexion and extension, trace; abduction, fair; adduction, poor.

Left hip: all motions good.

Right knee: extension and flexion, fair.

Left knee: extension, good; flexion, fair.

Right foot: Inversion, poor; eversion, dorsiflexion and plantarflexion, trace.

Left foot: Inversion and plantarflexion, trace; eversion and dorsiflexion, poor.

The result was, therefore, an appreciable gain in muscle power of the lower extremities. This, together with restoration of part of the muscle function in the lower part of the back, was sufficient to enable her to walk with the aid of crutches. In walking she supports her weight only on the left foot, using the right

foot to maintain her balance. She stated, in April 1939, that in this manner she can walk a quarter of a mile without fatigue. She is able to perform numerous household tasks, such as sewing and similar forms of work which can be done while in the wheel chair.

Urine examination at intervals has shown a correction of the pyuria which was noted on admission.

The results of treatment, nineteen months after operation, consist of diminution of spontaneous pain in her feet, elimination of muscle pain and tenderness, mild improvement in sensation of legs and feet, improved function of bladder and partial restoration of muscle function. With these changes there is also, as may be expected, a marked improvement in morale.

In December 1939, her physician reported her condition as being very satisfactory, stating that gradual improvement is still noticeable.

DISCUSSION

The visceral disturbances noted in both patients were undoubtedly due to dysfunction of the sympathetic nerves. Whatever change has resulted in visceral function is probably the effect of removal of a stimulating or irritating influence on the sympathetic nerves, whose function normally is an inhibition of the smooth muscle of the bladder and the intestine. Though neither patient regained normal function of the viscera, the improvement which followed operation was satisfactory.

The motor phenomena were, in their distribution and extent, such that they could not be attributed to interruption of function of the somatic nerves. This was evident both from the original motor involvement and also from the changes in motor power which followed operation. As the operation did not affect the motor fibers which showed the most striking changes, it would seem that the restoration of motor function was the result of reestablishment of autonomic nerve function, probably the sympathetic, which also constitutes the only neuron system supplying the muscles, which was affected by the operation.

Analysis of the sensory effects shows a complete lack of conformity to the somatic nerve pattern in the lower extremities. In both cases the type of sensory defect was that of cross-section or "glove and stocking" anesthesia, which is commonly attributed to hysteria. In neither of the patients under study was there any reason to consider hysteria as an important factor. This form of anesthesia has been observed by Kahler in several kinds of vascular disease (peripheral arteriosclerosis, endarteritis obliterans, periarteritis nodosa) and was believed to be caused by poor blood supply in the terminal branches of peripheral nerves⁴. In the cases under study no change in the sensory findings was noted

in case one, and in case two the field of anesthesia was narrowed.

Subjective spontaneous pain was relieved in both patients. This was probably due to root compression or irritation. The pain was not dermatomic in its distribution and is most easily explainable as sympathetic nerve pain.

Trophic disturbances, as decubitus ulcers seen in case one, are common in spinal injuries and are generally ascribed to an upset of nerve function, although there is considerable controversy in regard to the system of nerve fibers which are affected. Asher and his coworkers maintain that trophic function is subserved in large part by the sympathetic nervous system^{5,6}. Kure^{7,8,9} claims that trophic function of tissues is regulated by the spinal parasympathetic nerves and that this is a specific and direct action of the nerves, without the intermediation of the blood supply. In case one, no benefit was obtained except temporary healing of the ulcer.

The nature of the operative procedure in both cases was such that any change in nerve function would affect only the nerve roots in their extradural course at the level of the operative field. No abnormalities were noted which could be interpreted as a compression of the roots of the cauda equina within the dural sac, unless such an effect was produced by the massive adhesions at the site of the original injury. These, however, were left intact and were therefore not influenced.

It seems justifiable to conclude that many of the neural manifestations which were encountered were caused by pathologic alterations in epidural fat, together with adhesions which were probably due to the original injury. It is reasonable to believe that the disorders of nerve function were predominantly results of sympathetic nerve dysfunction.

SUMMARY

A report is made of two cases of bullet wound of the spine. The injuries resulted in extensive damage to motor, sensory and visceral functions. Disability had existed for two years without much change. Treatment consisted of surgical removal of epidural fat and fibrous adhesions within the spinal canal. This was carried out in one case below, in the other above, the level of the original injury. The result of treatment in each case consisted of elimination of pain, a satisfactory though incomplete restoration of motor power and visceral function and, in one case, improvement in sensation. Analysis of the subjective and objective manifestations, before and after treatment, indicates that involvement of the sympathetic nerves was responsible for most of the clinical phenomena.

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TRAUMATIC ANEURYSM OF SCALP

Maurice A. Walker, M.D.

Kansas City, Kansas

Samuel S. Caplin, M.D.

Indianapolis, Indiana

Contusions of the head are common but arterial aneurysms occurring subsequently are extremely rare. In a recent review,* only thirty-four cases were found recorded in the literature since the year 1765.

REPORT OF CASE

One of us (S.S.C.), an intern aged twenty-seven, was called in the middle of the night. When he sat up suddenly, he bumped his head into a round metal rod on the bed. A large hematoma developed immediately in the left frontal region. This swelling gradually decreased during the next few days, leaving a fluctuant oval mass 1.5 by one cm., three cm. above the outer end of the eyebrow. The tumor pulsed with the heart beat. The skin covering this area was bright red. General physical examination was normal. Complement fixation tests were negative.

Eight weeks after the injury, using local anesthesia, a sac one cm. in diameter was freed from the surrounding tissues. A pulsating artery two mm. in diameter entered at each end. These vessels were ligated with fine catgut, the sac removed, and the skin closed with a subcuticular suture. Three years after the injury, only a fine scar marks the site.

*Winslow, N., and Edwards, M.: Aneurysm of the temporal artery. *Am. J. Surg.*, 28:696-702 (June 1935).

According to Science Service, the U. S. Navy is shipping to Cuba a new 500-bed mobile hospital that will be rushed to any outpost in the Western Hemisphere where American fighting forces may need hospital care. The staff will include thirty medical officers and 300 enlisted men of the Navy.

President's Page

To the Members of The Kansas Medical Society:

The success of post graduate medical education in Kansas, fostered by the State Medical Society, is dependent first on an active enthusiastic membership; second, good attendance and excellent scientific programs at state, county and sectional society meetings; third, on publication of well edited scientific articles in the Journal of The Kansas Medical Society; fourth, on specific programs for post graduate education arranged by special committees of The Kansas Medical Society.

These committees may contribute further to the health of the people of Kansas by programs designed to properly educate the general public concerning early signs or symptoms, treatment, etc., in certain disease problems. Surely the work of the Committee on Control of Cancer, with both professional and lay education, has contributed to the fifty per cent reduction in mortality from cancer of the skin in Kansas.

Recent United States Public Health Service reports show that Kansas is one of three states in which females live longest and one of six states in which males live longest. This longevity record surpasses that of any of the states advertising healthful climates.

Another index of the generally good health enjoyed by Kansans is embodied in the low percentage in rejections among young men of the State drafted for military service during the World War. Kansas ranked sixth in having the lowest percentages of rejections, exceeding by only 2.2 per cent the state having the lowest percentage of rejections.

These are facts of which Kansas may be proud. We of the medical profession may contribute toward making this record even better by continuing, developing and supporting post-graduate medical programs and programs of lay education.

Sincerely,

A handwritten signature in dark ink, reading "Loren Loveland M.D." in a cursive script.

President, The Kansas Medical Society.

EDITORIAL

PHYSICIANS FOR NATIONAL DEFENSE

As the national defense program gathers momentum and an increasing number of troops are assembling for training and military service the reality must soon penetrate the minds of the physicians of the United States that they are to furnish the personnel of the Medical Corps of this army. It is estimated that by early summer all of the medical officers belonging to the Reserve Corps in Kansas will be called into service. Beyond the Reserve Corps there will be many physicians needed. If sufficient number volunteer, induction of physicians will not be required. It is hoped that Kansas physicians will not wait for induction.

Whether we are in favor of military participation in the present war or not is beside the issue. Whether we consider ourselves essential to an institution or to the health of our community or to the welfare of our personal practice, which has perhaps been built up with considerable diligence and solicitude, is not the question which confronts the physicians of Kansas and of the nation. A program for national defense is under way and it is the duty of every physician who may be of service to his country to offer that service. If but a small proportion of physicians who should do so will volunteer there will be no need for a selective service order especially for physicians.

The question of medical personnel for the armed forces of the United States is an important issue which must be faced in the next few months and it cannot be regarded with indifference or considered lightly. The need is urgent.

AS A MATTER OF FACT

In the New York Times of December 17, 1940, Mrs. Roosevelt is reported to have said that the rejection of men physically not fitted for military service would "give impetus to the movement for a comprehensive and nationwide health program.

The discovery of the need is the first step toward creating a demand . . . the rejection of men for service dramatizes the need"*

A nationwide health program, comprehensive, well considered and planned, devoid of political considerations, based on demonstrable need and adjusted to the ability of the people to pay for it, would unquestionably have the support of the medical profession. Speaking throughout the Nation in 1940 Dr. Nathan B. Van Etten, president of the A.M.A., has said and reiterated: "In advocating a new health program, I believe that a National Department of Health with a Secretary of Health in the cabinet is as important as a War Department with a Secretary of War.

"Defense against disease is as important as defense against a military enemy" On the need for a new health program there is general agreement, and this JOURNAL advocates it and will support such a movement to the limit of its ability and influence. Mrs. Roosevelt says: ". . . The discovery of the need is the first step toward creating a demand. . . ."* With this idea we can agree. But we must insist that such evidence as is adduced in support of the need be factual. If Mrs. Roosevelt will base her discovery of the need on Dr. Van Etten's statement: "Our mental unfitness is revealed by 500,000 hospital beds occupied by the institutionalized insane. Our physical unfitness by a half million active syphilitics," her discovery will be solidly based on fact.

But as to the state: "the rejection of men for service dramatizes the need," we can concede only that it is . . . dramatic. For, on December 17, 1940, Colonel McDermott, director of the Selective Service in New York City, released to the press an analysis of the causes for rejections compiled by the Medical Division which gives the details of the medical causes for rejection by 120 local boards and the local induction centers. This sampling of registrants comprised 1,643 men of whom 1,213 were accepted for full military duty. There were 430 rejected as disqualified for full military duty or designated for limited duty only. For the information of our readers we publish herewith the causes for rejection of the 430 men:

Causes for Rejections	Primary	Secondary
Underweight	26	17
Overweight	11	12
Deficient height	2	1
Poor chest expansion.....	0	5
Defective vision	74	32
Chronic otitis media	19	4
Impaired hearing	4	9
Nasal defects	3	5
Infected tonsils	0	3
Speech defect	0	5
Insufficient teeth	88	20
Disease of gums	4	1
Deformity of jaw.....	1	0
Rheumatic heart disease	15	2
Valvular heart disease.....	30	7
Myocarditis	1	2
Hypertension	8	21
Tachycardia	3	12
Congenital heart disease	2	1
Hypotension	0	1
Enlarged heart	3	9
Systolic heart murmur.....	3	6
Angina pectoris	1	0
Hernia	16	9
Peptic ulcer	3	1
Hemorrhoids	0	10
Pilonidal sinus	1	1
Varicocele	4	6
Hydrocele	0	3
Disease of skin	1	1
Deformity of head.....	1	0
Deformity of spine	4	12
Loss of limb.....	4	0
Loss of toe or finger.....	1	1
Paralysis of limb.....	18	3
Defective joint	5	1
Deformity of limb.....	10	5
Varicose veins	2	7
Flat feet	1	16
Osteomyelitis	2	0
Hammer toe	0	1
Pulmonary tuberculosis	15	0
Chronic bronchitis	2	1
Bronchial asthma	1	0
Pleurisy	1	0
Spontaneous pneumothorax	1	0
Hemoptysis	0	1
Deformity of chest.....	0	3
Undescended testicle	2	1
Syphilis	6	90
		(Positive Wassermann)
Doubtful Wassermann	0	26
Gonorrhea	0	1
Albumin in urine.....	0	2

We shall draw no conclusions from this sampling; we present it merely in evidence, marked Exhibit A, for study. As a guide, let us ask:

1. Does this sampling even remotely suggest any great need for a health program?

2. In the judgment of any competent physician do the rejections by cause indicate that more than a very small percentage of the defects could have

been prevented by previous medical care or attention?

3. Are not the majority of the rejections due to causes beyond the help of medical care? Are they not of a kind which even the most extensive health program could not obviate?

If statistics as they become available from the rest of the Nation parallel this regional sampling, even the most expert dramatists will apparently be able to find little material for their art in the rejection of men as unsuited for military service. However, as they wait for further reports from Selective Service headquarters, may we call their attention again to the 500,000 hospital beds occupied by the institutionalized insane and the half-million people suffering from active syphilis mentioned by Dr. Van Etten? Surely here is stark tragedy enough to dramatize the need for an effective national health program without going further afield, but, if go they must, then how about the insane who are not institutionalized? Or, are there none here?—From the New York State Journal of Medicine, January 15, 1941.

CANCER CONTROL

EPITHELIOMA OF THE PENIS

G. B. Morrison, M.D.

Wichita, Kansas

Epithelioma is the most common malignant tumor of the penis. The vast majority of cases occur between the ages of forty and sixty, although a considerable number occur at a much earlier age. Epithelioma of the penis bears a definite relationship to pre-existing benign lesions of the glans or prepuce. Phimosis is the most important contributing factor, because of the associated balanoposthitis, but the disease may originate in chronic ulcers, in healed scars of traumatic or other origin, or may follow the common so-called venereal warts, or leukoplakia of the penis.

There are two important types of epithelioma; the papillary or cauliflower, and the ulcerative. Incipient carcinoma takes the form of malignant trans-

formation in warty growths, as an eroded papule, or as a small ulceration.

Metastases occur primarily in the inguinal glands, and sometimes in the deep femoral nodes. Enlargement of the inguinal glands may result from a complicating pyogenic infection, and are indistinguishable clinically from metastasis.

The clinical diagnosis of early carcinoma of the penis is difficult, since the lesion may resemble a simple ulcer, a small wart, a syphilide, a tuberculous lesion, or possibly a chancroid. If a definite diagnosis cannot be made by the usual laboratory tests, then a segment of tissue should be excised at the point of greatest induration for microscopic examination. If the early lesion is unmolested, it gradually increases in size and in time marked tissue destruction results. All varieties eventuate in ulceration and tissue destruction, the papillary type being slower in evolution than the primarily ulcerative form. All chronic vegetative and ulcerative lesions of the penis should be considered malignant until proved otherwise.

Untreated penile carcinoma is invariably fatal, although at times the process may continue over a period of several years. The best results from treatment are secured by a combination of irradiation and operation. Irradiation alone rarely controls the disease. The type of operation required depends entirely on the size of the primary lesion and the extent of the metastases.

TUBERCULOSIS CONTROL

TUBERCULOSIS—AN INTIMATE CHRONICLE

John A. O'Hale, M.D.

In 1932 the author discontinued medical school and entered a sanatorium with the diagnosis of moderately advanced tuberculosis. After more than six years of intermittent curing and working, it was decided to collapse the lung by thoracoplasty. Space permits only that part of the story which has to do with the operation. It was scheduled for a Thursday afternoon. The Monday of that week the patient entered the hospital for the routine laboratory tests. He forced fluids, did this patient, to the extent of three quarts a day and between meals he nibbled on a chocolate bar.

The morning of the operation arrived. The breakfast was a scanty one. The entire right side of the

chest was shaved. But the event that he remembers most vividly is the enema, his first. He thought his intestines would break unless that eventuality were prevented by premature death from cramps. And he had prescribed enemata not knowing the sensation they produce.

Lunch consisted of six grains of sodium amytal. Soon he was asleep. Thereafter events grew hazy. He was awakened when the nurses came to dress him for the operation but the awakening was perfunctory. Faintly, he realized that one nurse was donning the boot-hose and another was sticking the hypodermic needle into his arm. He must have slept for he did not recall her extracting it. Nor could he remember anything of his transfer from bed to stretcher, the long ride from one building to another, down one noisy elevator and up another, nor the operation room itself. In fact, the next thing he knew he was back in his room, dusk had settled, a few friends were looking through the door and a nurse was beside him. He felt fine and fully awake.

Just then his doctor entered the room and in his bounding, cheerfully forceful way told him of the good result. "Four ribs practically entirely removed and the lung has collapsed nicely. You probably won't need any more surgery," he added.

That made the patient feel so well that he was tempted to climb over the side guards. The inclination was mental rather than physical and instead, he swallowed a little Vichy and was happy to retain it. Nine p.m. The visitors and well wishers vanished. The nurse pressed out the lights as she withdrew into the corridor, and he was alone.

Well! With nothing to do his mind wandered to his pulse and his fingers were not long in following. He couldn't count it; it was so fast and irregular. But he felt well. Maybe he lay there for an hour when he retched suddenly, forcefully and unexpectedly. He thought his lungs and abdominal organs had popped out through his subclavicular region. He learned then, without aid of a dictionary, what the term exquisite pain means. Strangely enough the wound on which he was lying didn't bother him at all then. For the few subsequent retches he braced himself and instead of having them explode in his chest they were eased over the pharynx with little discomfort.

That first retch seemed to be the signal for the pain to begin. First there was hyperaesthesia around the mouth, probably due to the tightness of the anaesthesia breathing cup. Next, all his teeth began to ache, and that's not hyperbole. They ached all through that first night. Later, his shoulder began to clamor for self assertion. He didn't sleep very well that night, and occasionally, with the assistance of the nurse, he would turn from back to side, or

vice versa, over the big bandage, and each time, try as he would to prevent it, the cautious maneuvering always ended in a thud as if he were rolling up or down a curb.

That first postoperative night he had a drenching sweat, and was quite worn out waiting for the dawn. When it came he slept for some three hours and felt wonderfully improved.

That day when the urinal was handed to him at various regular intervals he could void all right, but it was accompanied by no urgency, only by a sensation of numbness, and he couldn't predict whether he would void an ounce or a pint. The second night the sweat was only dampening. Thereafter they were absent or too mild to be noticed.

The first postoperative days during those few minutes each day when the patient was turned on his unoperated side, dyspnea was almost suffocating. He noticed none at other times.

Although there was some discomfort in the operated shoulder, the pain really didn't come in earnest until the third night. Then his back began throbbing in the region of the wound, and muscles that hadn't been incised were lame. About every half hour he would attempt to relieve the pain by changing his position. This produced more discomfort but little else; for, to the large bandage on his back was now supplemented a shot bag of the general size and shape of a rolled up Sunday newspaper. These two articles effectively kept him in his place.

The night wore on and he was feeling sick and irritable from pain and the lack of sleep; his former resolve to take no pantopon broke down, then and there. It was the first "hypo" that he ever received for the relief of pain. What a great drug it is. In a short time he felt comfortably warm and hazy, a delightful haziness. Gradually, an itchiness appeared all over his skin. He remembered promising himself that he would scratch it later, but before he got to it the night passed, nor does he remember having slept. That didn't annoy him because sleep would have robbed him of that pleasant hazy experience. It was as if, after much work, he had dropped exhausted on the bed, too tired to sleep, and had disintegrated into two people. The one who had pain was unimportant; the important, the conscious one was looking nonchalantly on and not minding it.

On the fourth postoperative day, a small three-pound shot bag was cradled in the right subclavicular

region. It later was accompanied by a severe headache in the right frontal and occipital regions. The patient had never been subject to headaches, and the occurrence of headache after wearing that shot bag, and a larger one, was noticed too frequently to be mere coincidence. There was a relationship between them.

Saturday, two days postoperatively, he had his second enema. The following Monday he had his last. They confirmed his original opinion of them. They gripe—and that's not slang.

The big bandage was removed one week postoperatively, as were the skin sutures. The scar was a nice one. Naturally he was interested in trying to move his arm. There were definite weakness, soreness and limitation of motion, but he could move it surprisingly well. He roughly estimated it to have maintained about three-fourths of its normal function in all directions. Thereafter, each day, he grabbed hold of the steel bars at the head of the bedstead and worked his arm progressively further along it. Within a month postoperatively there were only stiffness and weakness, without any real limitation compared with the other side. Within six weeks all the stiffness had disappeared, and, except for definite weakness, the arm was quite normal. The weakness was especially marked when he held the arm out in front of him, particularly when he elevated it above the shoulder.

Four days postoperatively, with the aid of a toe hold on the foot of the bedstead, he was able to sit up unassisted, but he didn't feel quite well until ten days postoperatively.

Six weeks postoperatively the collapse as shown on the x-ray film appeared to be excellent and it was decided that one stage of four ribs was all that he needed. The following week he returned home (and with the aid of a diary began to write a few notes regarding the operation).

One day he dropped his pencil under the bed and in an effort to regain it had to get down on his knees and reach forward, upward and outward so that the scapula on the operated side was rotated far forward and elevated. He retrieved the pencil all right but the angle of the scapula somehow climbed over the fifth rib, and on its way back nestled inside the rib leaving him in little pain but greatly embarrassed. Slowly, he manipulated the scapula back into place. The scapula hasn't locked since, but when he hunches

SCIENTIFIC EXHIBITS — 1941 Annual Session

Application for space in the scientific exhibit section should be made to Dr. C. B. Trees of Topeka before April first.

The Committee is anxious to have a large number of exhibits by Kansas members.

IN 1541, Francisco Vasquez de Coronado sought the Golden City of Quivira. He failed to find the fabled city of gold, did discover Kansas and report to his Spanish king that here was a land with rich soil ideally suited to agriculture.

In 1941, Mr. and Mrs. America will re-discover Kansas—the state which has fulfilled the golden promise recognized by the Spanish explorer. They will find a great agricultural empire combined with a wealth and diversity of mineral resources. They will learn that Kansas manufactures from raw materials produced or mined within the state countless items essential to modern society.

Kansas will put on its best bib and tucker for the thousands of visitors this year. There will be special celebrations in recognition of the 400th anniversary of the first visit of the white man—nearly four score years before the Pilgrims docked the Mayflower at Plymouth Rock.

Special invitational literature on the state and its numerous attractions has been prepared by the Kansas Industrial Development Commission. These will carry the state's cordial invitation to Mr. and Mrs. America to visit Kansas in 1941.

THE KANSAS INDUSTRIAL DEVELOPMENT COMMISSION

STATE HOUSE TOPEKA

his shoulder far upward and forward he can still feel a bumping of the angle of the scapula as it goes over the fifth rib.

Before the right pectoral muscles had regained much tone he could place his fingers in the depression left by the excised ribs and feel the muscles on the pleural side of the scapula, and could push the scapula backwards. Now, six months after the operation, this can no longer be done.

As long as four months postoperatively, the patient could still feel very occasionally a vague pinching in the region of the scar and thought perhaps it was due to regeneration of the nerves.

Your chronicler hopes to continue to observe the result of this operation, and report more fully on its outcome after sufficient time has elapsed to properly evaluate its benefits and shortcomings.

From Tuberculosis Abstract, February, 1941. Tuberculosis—An Intimate Chronicle by John A. O'Hale, Amer. Rev. of Tuber., Nov. 1940.

NEWS NOTES

LEGISLATION

The osteopaths presented information, in regard to the bill in which they seek the right to practice medicine and surgery, (H.B. No. 1) at a proponent's hearing held on February 6 by the House Committee on Hygiene and Public Health. The Society presented information in opposition to the bill at a hearing before the same committee on February 10. No osteopathic bill has as yet been introduced in the Senate. The members of the House Committee on Hygiene and Public Health are as follows: Mr. Myron F. Robbins of Scott City, Chairman; Mr. W. C. Daugherty of Syracuse; Mr. John A. Holmstrom of Randolph; Mr. Homer E. Ira of Chase; Mr. Frank M. Kessler of Wichita; Mr. C. O. Lutz of Sharon Springs; Mr. L. W. Mahon of Yates Center; D. B. Fordyce, D.O., of Oswego, and K. A. Bush, D.O., of Harper.

Other bills of interest introduced to date are as follows:

Senate Joint Resolution No. 2. A resolution making an additional appropriation to the Vital Statistics Department of the Kansas State Board of Health. (This measure which was introduced by the Senate Committee on Ways and Means and which has passed both Houses of the Legislature makes additional funds available to the Kansas State Board of Health for the handling of the greatly increased number of birth certificate requests being received by reason of circumstances incidental to the social security and national defense programs.)

House Bill No. 8. A bill providing for the creation of a State Board of Naturopathic Examiners and providing for the licensure of naturopaths. (This bill was killed by the House Committee on State Affairs on February 12.)

House Bill No. 25. An enabling act pertaining to the appropriation provided by Senate Joint Resolution No. 2.

House Bill No. 31. An act providing that chiropractors shall attend at least two days of post graduate work each year before they shall be eligible to have their licenses re-registered. (This measure was passed by the House on

February 4 and was killed by the Senate Committee on Public Health on February 12.)

House Bill No. 41. A bill authorizing the issuance of bonds for the construction and equipment of a hospital in Russell.

House Bill No. 65. A bill forbidding the sale of fireworks.

House Bill No. 78. A bill providing for the construction and equipment of a hospital in Arkansas City.

House Bill No. 80. Same as Senate Bill No. 44.

House Bill No. 143. A bill authorizing the issuance of bonds for the construction and equipment of a hospital in Pratt.

House Bill No. 162. A bill providing for the payment of physicians bills for certain services rendered to the Crippled Children's Commission in 1932.

House Bill No. 201. An act regulating the sale of narcotics.

Senate Bill No. 39. Same as House Bill No. 78.

Senate Bill No. 44. A bill providing a new practice act for embalmers and funeral directors.

Senate Bill No. 77. Same as House Bill No. 88.

Senate Bill No. 85. Same as House Bill No. 94.

LOCATIONS

The calling of medical reserve officers to active duty has made available a considerable number of excellent locations in this state. In fact several of these are counties and communities which do not at present have a physician. The Society central office will be glad to supply all information possible on this subject to interested physicians.

The medical reserve corps of the United States Army, Navy and Marine corps also have a sizeable number of commissions open. The various corps area headquarters of these divisions will be very glad to correspond with all interested physicians in this regard.

MEDICAL RESERVES

It is believed that all members will be interested in the following letter received from Dr. R. E. Speirs of Dodge City pertaining to his active duty as a medical reserve officer. Dr. Speirs, a Captain, is at present stationed at Fort Des Moines, Iowa.

"My first orders stated that I should report somewhere on September 30th. That was all. In the meantime I hastily closed the office and disposed of household goods—By October 3rd nothing further had been heard. My disposition was suffering somewhat so a letter was written, (though never mailed), to corps headquarters inquiring for further details—Orders arrived on the 5th to proceed to a certain post on the 7th".

"Upon arrival at the post, report to post headquarters and while there sign the register. The Adjutant will tell each newcomer a few necessary things and either assign him quarters on the post or on commutation (living off the post). An extra allowance is made for the latter. He will then direct each officer to his immediate commanding officer, who maps out duties in a general way".

"Each new officer is allowed a day or two to establish himself and his family and sufficient time to procure a uniform. Because of the great demand for military clothing it is difficult to obtain and orders are filled slowly. The cost of a uniform ranges from

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one hundred and twenty to one hundred and seventy-five dollars. Just what to buy is difficult to say because the uniform is slowly being changed. For instance the campaign hat is out; the Sam Browne belt is only for dress. The essentials are a blouse, two pairs of slacks, Sam Browne belt, black neckties, tan shoes and shirts. One or two poplin shirts are needed depending upon how much the blouse will be worn and either two olive drab or two 'pink' or one of each, to be worn without the blouse. Before buying a garrison cap it would be well to find out its status as over-sea caps are replacing it. In the colder climates over-coats are an important item. Issue coats needing only the buttons changed, can be obtained from the commissary at a great saving. Before going to a tailor to be outfitted it is probably advisable to go to the post exchange. The post exchange does not carry the same quality in all garments that the tailor will have, but comparable articles will be much cheaper. Also they will not fit so well but the post tailor will alter them for a reasonable fee."

"It is essential that each officer and wife call upon his immediate commanding officer and the Post Commander within a limited time; some say within three and others ten days of one's arrival. This is a formal call, not to last over fifteen minutes, and to be made between the hours of eight and nine p.m. Formal attire is in order after five p.m. A tuxedo, a class A uniform (blouse, Sam Browne belt, white street shirt, black tie, slacks) or the 'Blues' may be worn. The officer leaves two calling cards as he is calling on both the commanding officer and his wife, while his wife leaves only one, as she calls on the commanding officer's wife. From time to time officers may call informally on those newly arrived. These calls must be returned within ten days."

"In so far as I know one's wife is expected to come with her husband unless specifically notified to the contrary. It still seems best to travel light; that is bring enough dishes for four people and the essential cooking utensils. The reason is that no one ever knows how long he will be stationed at one place. Those who bring their furniture have to worry about its transportation to the next place. The army will move it without charge but there is occasionally a delay. Quarters on the post are unfurnished for the most part. There are some old chairs, beds, desks and other pieces that can be obtained from the quartermaster. These certainly do not make it look like home, but it seems enough to me (an argumentative point in our family) . . . If the essentials can be packed in the car, all is well . . ."

"To reiterate travel light, for not infrequently twenty-four to forty-eight hours is all the warning one has before starting to another post."

CANCER PROGRAM

Arrangements have been completed wherein a post graduate course on control of cancer will be offered to physicians of the state through funds provided by the United States Public Health Service, and thru assistance of The Kansas Medical Society, and the Kansas State Board of Health.

Dr. George Thomas Pack, Assistant Professor of Clinical Surgery, Cornell University Medical College, of New York will be the speaker.

The course will be presented on six consecutive days in

six well distributed areas of the state. All meetings will be held from five until seven and eight-thirty until ten-thirty o'clock in the evening, with the exception of the meeting in Wichita, which is to be held in conjunction with the spring clinical program of the Sedgwick county medical society. The time for the Wichita meeting has not as yet been announced.

Dr. Howard E. Snyder of Winfield, Chairman of the Society Committee on Control of Cancer has announced the schedule of meetings as follows:

Sunday—March 16	Lawrence
Monday—March 17	Chanute
Tuesday—March 18	Wichita
Wednesday—March 19	Dodge City
Thursday—March 20	Hays
Friday—March 21	Clay Center

NATIONAL CONFERENCE

The following program was presented at the fifteenth annual meeting of the National Conference on Medical Service held in Chicago on February 16:

VOLUNTARY GROUP MEDICAL CARE PROGRAMS

"The Second Year"—Mr. J. D. Laux, Detroit, Michigan.
 "Why Are We Waiting?"—Dr. W. M. Hartman, Macomb, Illinois.

"What We Learned from the Wisconsin Experiments"—
 Mr. J. G. Crownhart, Madison, Wisconsin.

MEDICAL PREPAREDNESS

- Dr. Irvin Abell, Louisville, Kentucky.
- Dr. Morris Fishbein, Chicago, Illinois.
- Colonel Leonard Rowntree, M.D., Washington, D. C.
- Dr. Olin West, Chicago, Illinois.
- Dr. Roy W. Fouts, Omaha, Nebraska.

PRESIDENT'S ADDRESS

- Dr. Forrest L. Loveland, Topeka, Kansas.

STATE MEDICAL SOCIETIES' POST GRADUATE PROGRAM

"A Rural State's Program"—Dr. H. E. Snyder, Winfield, Kansas.

"As Carried on in Minnesota; A Cooperative Program"—
 Dr. W. A. O'Brien, Minneapolis, Minnesota.

"The Illinois Program"—Dr. Robert S. Berghoff, Chicago, Illinois.

LEGISLATIVE PROBLEMS

"Federal"—Dr. E. H. Cary, Dallas, Texas.

"State"—Mr. J. W. Holloway, Jr., Chicago, Illinois.

MEDICAL CARE FOR SOCIAL SECURITY CLIENTS

"Minnesota's Plan for the Care of the Medically Indigent"

- Mr. Walter F. Finke, St. Paul, Minnesota.
- Mr. Alfred W. Adson, Rochester, Minnesota.
- Mr. Walter G. Stumbo, Topeka, Kansas.
- Dr. Charles H. Phifer, Chicago, Illinois.

"The Annual Meeting from the Standpoint of the Exhibitor"—Mr. C. H. Wantz, Chicago, Illinois.

Dr. Forrest L. Loveland of Topeka and Dr. Harold M. Camp of Monmouth, Illinois, were President and Secretary respectively of the organization during 1940-41.

The following Kansas members attended the meeting: Dr. Forrest L. Loveland of Topeka, Dr. H. E. Snyder of Winfield, Dr. M. C. Ruble of Parsons, Dr. O. L. Cox of Iola, Dr. H. E. Haskins of Kingman, Dr. F. S. Hawes of Russell, Dr. J. E. Henshall of Osborne, Dr. J. F. Hassig of Kansas City. Mr. Walter Stumbo of Topeka, formerly an

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MEDICINE—Two Weeks Intensive Course starting June 2nd. One Month Course in Electrocardiography & Heart Disease every month, except August and December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course starting March 10th and May 5th. Informal Course every week.

GYNECOLOGY—Two Weeks Intensive Course starting February 24th and April 7th. Clinical, Diagnostic and Didactic Course every week.

OBSTETRICS—Two Weeks Intensive Course starting April 21st. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting April 7th. Informal and Personal Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting April 21st. Informal Course every week.

ROENTGENOLOGY—Courses in X-Ray Interpretation, Fluoroscopy, Deep X-Ray Therapy every week.

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Under certain circumstances, provided the volumes are not being actively used by the students, the Library will send such volumes as are needed to physicians in the state, on request, for a period of one week, provided carriage charges are paid both ways.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph. Gon. & Ven. Dis.*, 23, 201 (March) 1939.

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attorney for the Kansas State Board of Social Welfare and now personnel manager for the Topeka plant of John Morrell and Company attended as a guest speaker.

Drs. Ruble, Cox, Haskins, Hawes, Henshall, and Hassig also attended the thirty-seventh annual congress of Medical Education and Licensure which was held in Chicago on February 17 and 18.

KANSAS WOMEN'S FIELD ARMY

It is believed that the following information pertaining to the activities of the Kansas Women's Field Army for the Control of Cancer will be of interest to members:

Mrs. Donald Muir of Anthony is the State Commander, Mrs. J. E. Johntz of Abilene and Mrs. C. W. Hunter of Wellington are the State Deputy Commanders now serving.

The Vice-Commanders are: Mrs. C. W. Dannenberg of Hiawatha; Mrs. Hugh Whiteford of Kansas City, Missouri; Mrs. Joe E. Nance of Oswego; Mrs. T. F. Marbut of Emporia; Mrs. Tom Stewart of Wellington; Mrs. H. J. Adams of Belleville; Mrs. W. E. Davenport of Salina; Mrs. L. Carl Cox of Quinter; Mrs. Dan Hopson of Phillipsburg; Mrs. W. E. Woodard of Kinsley; Mrs. Easton C. Bray of Syracuse and Mrs. Arthur E. Wurth of Ashland.

A regional assembly of the Women's Field Army was held in Kansas City, Missouri, on February 13 and 14. Dr. Howard E. Snyder of Winfield, a member of the State Executive Committee of the Kansas division, was a speaker at the meeting.

The enlistment campaign for membership in the Women's Field Army will be conducted in April. Membership in the organization is \$1.00 of which amount seventy cents remains in the state and thirty cents is sent to the national organization. Hundreds of meetings have been held in the state during the past years as a part of the educational drive to reduce the mortality from cancer, the programs of which are under the direction of the Women's Field Army, the Society Committee for the Control of Cancer and the county medical societies in the counties the meetings are held.

TUBERCULOSIS SANATORIA

The Board of Directors of the Kansas Tuberculosis and Health Association passed the following resolution at a recent meeting:

WHEREAS, it is the belief of members and Directors of the Kansas Tuberculosis and Health Association that the Legislative and Executive Officers of the State of Kansas should have information in regard to the Tuberculosis situation in Kansas, and

WHEREAS, the Kansas Tuberculosis and Health Association, in connection with the Committee on Tuberculosis of The Kansas Medical Society, has made a study of the sanatorium facilities and the sanatorium needs of the State of Kansas, with the following conclusions:

1. Nationally accepted standards indicate that the minimum sanatorium facilities for any State should be two beds for each annual tuberculosis death, meaning 1050 beds for the State of Kansas, since our average tuberculosis deaths based on the five years prior to 1938 is 512.

2. There are at present, counting the new addition at Norton, approximately 650 sanatorium beds available in Kansas. This leaves a deficit of 400 beds to meet minimum requirements, one-half of which should be situated in the Southeastern half of the State. The other half of the increased bed supply should be near to Kansas City, Kansas, either at the Medical School or close enough to the Medical School to be used for teaching purposes. The public health needs of the State strongly dictate that one-half of these additional bed requirements should be provided at the coming session of the Legislature.

3. The public health problem of tuberculosis cannot be adequately met in the State without sufficient sanatorium beds and the lack of sufficient beds in the Southeastern part of the State is bringing unfavorable National attention to the State:

THEREFORE, BE IT RESOLVED that this Association in Annual Meeting of Board of Directors, December 30, 1940, petition the Governor of Kansas and its legislative bodies to provide through action in the 1941 Legislature for 400 additional sanatorium beds so that we may give prompt care to those of our citizens found to need treatment for tuberculosis.

Dr. C. H. Lerrigo, Executive Secretary of the organization, recently held a dinner meeting with the Ways and Means Committees and the Health Committees of the House of Representatives and the Senate, and certain other legislators for the purpose of discussing the resolution and Kansas tuberculosis needs.

POLIOMYELITIS

The National Foundation for Infantile Paralysis, which organization sponsors the annual "March of Dimes" campaign for assistance in programs pertaining to the study and control of poliomyelitis, announces in a recent report that it engaged in the following activities in the past year: Studies have been carried on through grants from the Foundation on problems of epidemiology, virus research, relationship of nutrition to poliomyelitis, and the prevention and treatment of the disease, with additional programs of professional and lay education.

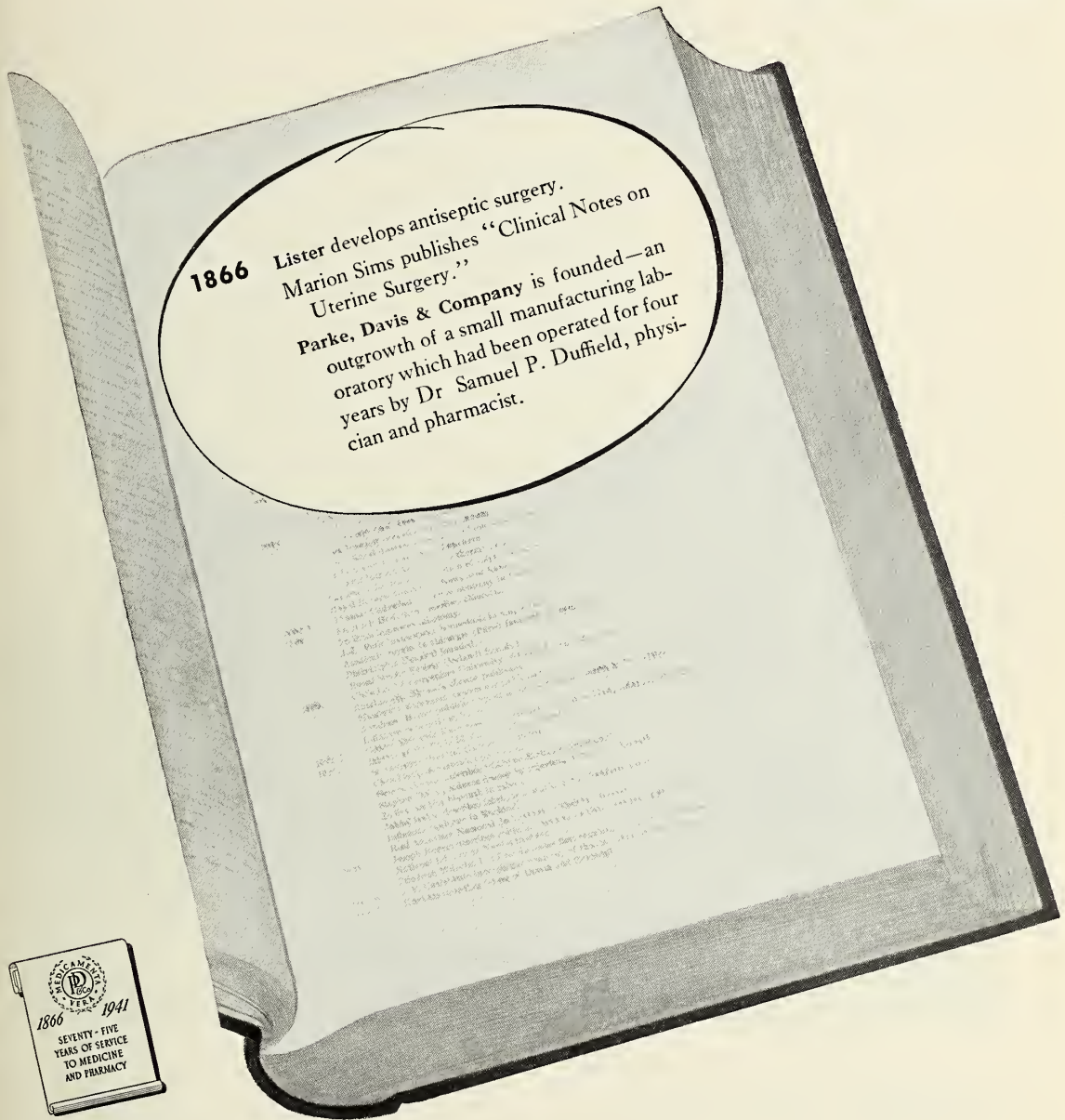
In reporting on the distribution of the virus in the body all reports showed that the virus could be routinely recovered from the central nervous tissue of human fatal cases and from experimental animals, and that excepting for tonsils, adenoids and lymph gland tissue, no other part of the body was shown to harbor the infection. All attempts at producing immunity have thus far met with failure. Additional grants were recommended for continuation of existing studies and new investigations in the amount of \$137,350.00.

SECTIONAL MEETING

March 10, 11 and 12 have been set as the dates for a Sectional Meeting of the American College of Surgeons in which the states of Minnesota, North and South Dakota, Iowa, Nebraska, Montana, Kansas and Wisconsin, and the province of Manitoba will participate. The meeting of this section will be held at Minneapolis, Minnesota.

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The medical profession at large, as well as hospital trustees, superintendents, dietitians, and other hospital executive personnel, are invited to attend the sessions of the sectional meeting and the hospital conference, a sufficiently varied program having been arranged to interest members of the several professions which are concerned with service to the sick and injured.

COUNTY SOCIETIES

The Brown County Medical Society elected the following officers for the year 1941 at a recent meeting; Dr. Ralph M. Wyatt of Hiawatha as President; Dr. Fred G. Poutre of Horton as Vice-President; Dr. G. M. Edmonds of Horton as Secretary; and Dr. R. T. Nichols of Hiawatha as Treasurer.

The members of the Clay County medical Society were the hosts to the Golden Belt Medical Society at Clay Center on January 9. The meeting consisted of an afternoon scientific program and a dinner. Speakers were: Dr. John Lattimore of Topeka, Dr. Paul Stookey of Kansas City, and Dr. Ray M. Balyeat of Oklahoma City, Oklahoma.

The Franklin County Medical Society held a meeting

on January 29 in Ottawa. Mr. Bert Winchester of the Farm Security Administration of Topeka spoke on "Medical Cooperation."

The Harvey County Medical Society met on January 6 in Newton. Speakers were: Dr. John W. Hertzler of Halstead who spoke on "Heart Disease" and Dr. James A. Wheeler of Newton who spoke on "Poliomyelitis." Dr. F. W. Koons of Halstead was elected as President of the society to fill the unexpired term of Dr. E. M. Harms who has recently moved to Blackwell, Oklahoma.

The Labette County Medical Society held a meeting on January 22 in Parsons. Dr. Hugh McGaughey and Dr. R. C. Newkirk of Joplin, Missouri, spoke on "Sulfathiazole." The following officers were elected for 1941 at the meeting: President, Dr. M. C. Ruble of Parsons; Vice-President, Dr. Charles Miller of Parsons; Secretary, Dr. I. Waxse of Altamont; Censor, Dr. J. T. Naramore of Parsons.

The Marion County Medical Society held a meeting on January 8 in Marion. Speakers were: Dr. R. R. Melton of Marion who discussed "The Use of Inhalator for the Administration of Oxygen and Carbon Dioxide" and Dr. W. M. Tate of Peabody who spoke on "Clinical Photography in Medical Practice."

The Miami County Medical Society met on January 8 in Osawatomie. Dr. E. E. Attick of Kansas City, Missouri, spoke on "Neuro-muscular Coordination."

The Nemaha County Medical Society held election of the officers for 1941 at a meeting held on December 17 in Seneca. Dr. Sam Myers of Corning was re-elected as President; Dr. Martin Rucker of Sabetha was elected as Vice-President, and Dr. Virgil E. Brown of Sabetha was elected as Secretary-Treasurer.



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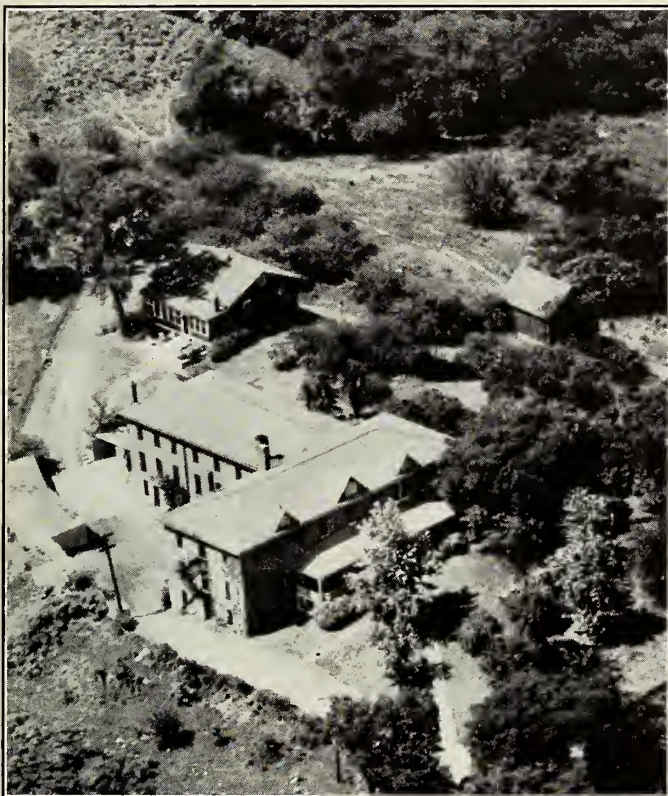
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The Northwest County Medical Society held its annual election of officers at a recent meeting. Dr. M. J. Renner of Goodland was elected as President; and Dr. Dale D. Vermillion of Goodland was elected as Secretary-Treasurer.

The Osborne County Medical Society elected the following officers at its December meeting: Dr. V. D. Parker of Natoma as President, and Dr. J. E. Henshall of Osborne as Secretary-Treasurer.

The Republic County Medical Society elected the following officers at the January meeting of that organization held in Belleville: President, Dr. C. V. Haggman of Scandia; Vice-President, Dr. F. C. Tyree of Wayne; Secretary-Treasurer, Dr. Paul L. Beiderwell of Belleville. The society in cooperation with the Board of County Commissioners is conducting diphtheria and smallpox immunization clinics for children from nine months to ten years of age. Approximately 1400 having been immunized to date.

The Riley County Medical Society held a meeting in Manhattan on December 10 with election of the following officers for 1941: Dr. O. M. Heiberg of Manhattan was elected as President; Dr. R. G. Schoonhoven of Manhattan was elected as Vice-President; Dr. Willard C. Schwartz of Manhattan was elected as Secretary and Dr. W. M. Reitzel of Manhattan was elected as Treasurer.

The Shawnee County Medical Society held a dinner meeting on February 3 in Topeka. Dr. Winnett Orr of Lincoln, Nebraska, spoke on "The Role of Sulfanilamide and other Antiseptics in the Treatment of Wound Infections and Compound Fractures."

The members of Sumner County Medical Society were the hosts to the Cowley, Sedgwick, Pratt, Kingman and Harper county medical societies and to the Kay County Medical Society of Oklahoma, at a meeting held in Wellington on January 16. Dr. F. C. Beelman of Topeka spoke on "Modern Concepts Regarding Tuberculosis Control." At the December meeting of the Sumner County Medical Society the following officers were elected: President, Dr. H. L. Cobean of Wellington; Vice-President, Dr. J. E. Hill of Conway Springs; Secretary-Treasurer, Dr. R. W. Van Deventer of Wellington.

The Washington County Medical Society entertained the Washington County Press Club on January 14 at Washington. Mr. Carl Ossman of Greenleaf presented motion pictures of a trip to Alaska and Canada.

WANTED—Resident doctor, village and rural practice at Alden in Central Kansas; partially equipped office of late Dr. David T. Muir for rent; good roads; pleasant community; large territory; expenses small; hospitals eight and fourteen miles. Write or call Mrs. D. T. Muir, Alden, Kansas.

FOR SALE—Entire office equipment, including electrotherapy machines, instruments, treatment and instrument tables, fluoroscope, library, drugs, etc. Write or call, Miss Floy Liston, Baldwin, Kansas.

FOR SALE—Medical Library, 165 volumes, Tice, Sajous, Dictionaries, Hand-books, etc. Also some laboratory equipment. Write, C. F. Deaver, Sabetha, Kansas.

FOR SALE—McKesson Gas Oxygen machine for use of oxygen and nitrous oxide and four tanks (empty) also a Burdick, Infra Red light. Write Mrs. H. J. Terrill, 205 E. 13th Street, Ottawa, Kansas.

The Wilson County Medical Society held a dinner meeting in Neodesha on January 13. The February meeting of that organization will be held in Fredonia.

The Wyandotte County Medical Society held a meeting on January 21 in Kansas City. Speakers were: Dr. E. F. DeVilbiss of Kansas City who discussed "The Use of Metrazol in Treatment of Mental Diseases"; and Dr. Lee H. Leger of Kansas City who spoke on "Headache and Head Pain."

MEMBERS

Dr. B. J. Ashley of Topeka has recently returned from Minneapolis, Minnesota, where he took a post graduate course in ophthalmology at the University of Minnesota School of Medicine.

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KARO IS, OF COURSE, STILL AVAILABLE IN THE FAMILIAR SANITARY TINS

Dr. Donald E. Bux formerly of Topeka is the full-time health officer of the new health unit recently established in Riley County.

Dr. Fred E. Rogers, formerly of Linn, who recently returned from Chicago where he took a post graduate course at the Cook County Graduate School of Medicine, has announced the opening of offices at Ottawa.

DEATH NOTICES

Dr. Alexander P. Williams, 66 years of age, died on January 21 in Neodesha. Dr. Williams was born near Lafontaine on November 2, 1874, and was graduated from the Kansas City Medical College in 1901. He was a member of the Wilson County Medical Society.

KANSAS MEDICAL ASSISTANTS

At a recent meeting the Sedgwick County Medical Assistants heard Mr. Henry C. Myers of the Income Tax Division of the Internal Revenue Service explain pertinent problems in the preparation of income tax returns for physicians.

Dr. Robert P. Knight of Topeka addressed the Topeka Physicians Assistants Society on "Facts about Psychoanalysis" at a meeting on February 10. A tentative program for the state meeting on May 11 and 12 has been arranged by the Topeka Society. It is planned to commence registration at 2:00 p.m. on Sunday, May 11.

Has your group met recently? Won't you please send that information for inclusion in this section.

—Margaret MacKenzie, President.

The sputum positive case of tuberculosis must be hospitalized—Harry Mustard, M.D., N. Y. University.


AUXILIARY

PRESIDENT'S MESSAGE

During the next two months it is my plan to meet every auxiliary member in Kansas whom I have not had the privilege of meeting. How I wish this meant every eligible member in Kansas. Last year Dr. Nesselrode said—"I think it would be a splendid thing if each county medical society and each wife of a physician would assist in seeing that an auxiliary with a complete project program is efficiently sponsored and maintained in each county where such is possible."

Have you a friend who is eligible and lives where there is no auxiliary? Will you write to her and ask her to become a member-at-large? If she becomes acquainted with our objectives and plans she may help organize a new auxiliary in her own county.

In January it was the privilege of the state officers to



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meet with the members of the Wyandotte County Auxiliary and we were stimulated by the presence of sixty-five members and the excellent work they are doing. Plans are being made for a Public Relations Tea when officers of the many lay organizations of the county shall be guests.

With three other members from Labette county, I visited the Neosho County Auxiliary and while they have fewer members, the interest and enthusiasm is just as great. We were delighted with their progress.

This month we are looking forward to our visit with members of Lyon, Shawnee, Saline, Mitchell, Ottawa, and Marshall counties.

The Budget Committee met in Kansas City in January and planned the financing of the convention to be held in Topeka, May 13-15. Mrs. Ransley J. Miller, President of Shawnee county, and Mrs. F. C. Taggart, Convention Chairman met with the committee and plans for program and entertainment were discussed.

Mrs. J. S. Reifsneider, State Public Relations Chairman, has asked Dr. W. W. Bauer, Health Education Department of the A. M. A., to send you copies of the Questionnaire, "Women's Health Interests," and we hope you'll give this serious consideration.

Because this department wants to know who is listening to the A. M. A. radio program "Doctors at Work!" they have asked us to do this piece of work for them. At the National Board meeting in Chicago last November, Dr. Bauer told us his committee had considered each question thoughtfully and hope to find out the type of listeners they are reaching and the interest in the program. Let's get behind this piece of public relations work and ascertain if it is reaching the laity in Kansas.

—Mrs. T. D. Blasdel.

AUXILIARY NOTES

DID YOU KNOW?

Nine counties in Kansas, Butler, Cherokee, Lyon, Marion, Pratt, Sedgwick, Riley, Geary, and Shawnee have full-time county health departments.

Thirty-four towns in Kansas have the Standard Milk Ordinance?

Malta Fever is increasing in Kansas?

Our dues are due?

A new Wagner Bill pertaining to public health and medical care will be introduced in the present Congress? (See page 30 in the January number of the Journal of The Kansas Medical Society.)

The Osteopathic Bill introduced in the Kansas Legislature is in this same Journal.

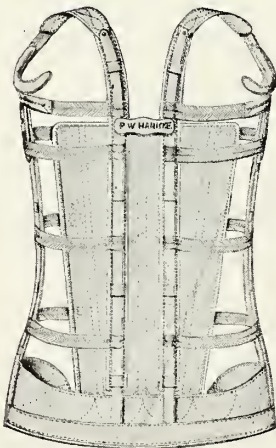
The American Social Hygiene Association, Inc., is making a concerted drive to safeguard men in military and naval training camps and in essential industries from the ravages of venereal disease. Plans for National Social Hygiene Day, held on February 5 included more than 5000 community meetings in all parts of the country and four regional conferences held in Philadelphia, St. Louis, New Orleans and Los Angeles.

In thirty-five years, 1905-1939, inclusive, Kansas had 64,296 cases and 307 deaths from SMALLPOX—all of which could have been prevented by vaccination. Kansas with a population of 1,864,000, in five years, 1935-1939 had 2,690 cases (an average of ten per week) and eight deaths from smallpox. New York City, with a population of 7,500,000, in the same period had two cases. WHAT SHALL WE DO ABOUT SMALLPOX IN KANSAS?

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THE TREATMENT OF CHRONIC INDIGESTION*

Walter Lincoln Palmer, M.D.

Chicago, Illinois

The title of this paper is in a sense a misnomer, for true indigestion is a rather rare entity. In fact, it is seen only in sprue, coeliac disease, carcinoma of the pancreas, and similar conditions. In this paper I really wish to discuss the management of chronic abdominal distress rather than "indigestion".

It is perhaps superfluous to state that the initial step in the management of any patient is the analysis of the symptoms and a detailed examination. Modern medicine utilizes various laboratory procedures, especially the x-ray, but not to the exclusion of the case history and the physical examination. The history should include not only a detailed study of the symptoms but also an appraisal of the social status of the patient, of his adjustment to his environment, and the possible role of emotional factors in his complaints. Perhaps the influence of the psyche is more clearly seen in the field of digestive disturbances than it is in any other field of medicine. The abdomen has been aptly described as the sounding-board of the emotions. And so the physician should be familiar with the role of the emotional factors. His first task, however, is the exclusion of organic disease. He must think not only of diseases of the abdomen but of other diseases such as pulmonary tuberculosis, thyrotoxicosis, migraine, brain tumor, pelvic inflammatory disease, and so on.

One of the most frequent lesions of the digestive tract is peptic ulcer. It is always to be suspected, and is to be diagnosed or excluded on the basis of the history and laboratory examination and objective studies with the x-ray and perhaps the gastroscope. The x-ray is surprisingly accurate in the diagnosis of ulcer. In fact, the x-ray examination of the stomach can almost never be omitted in the examination of a patient with chronic abdominal distress. On the other hand, the report of the roentgenologist must always be taken with a grain of salt. It is not

sufficient for him merely to state that a lesion exists. He must present the evidence. The same is true of the gastroscopic examination. It is not possible for the gastroscopist to photograph the picture he sees, but he must describe it clearly. The x-ray and the gastroscope are such invaluable methods that they should be used practically in every case, not only to exclude or confirm the diagnosis of the ulcer but also to study the complications present and to follow the course of the lesion under treatment. A gastric ulcer may be seen roentgenologically en profile as a penetrating niche or en face as a sharply circumscribed collection of barium surrounded by a clear halo. The healing of the ulcer can be followed by the disappearance of the crater, although we know that disappearance of the roentgenologic crater does not betoken complete healing. Several weeks or months of additional treatment may be required before the defect is covered with regenerated and completely normal mucosa. I wish to emphasize the fact that the most important clinical evidence that a given gastric ulcer is benign is the roentgenologic and gastroscopic proof of complete healing.

In duodenal ulcer the classical roentgenologic manifestation is the deformity. This may be produced by either an active or a healed ulcer. The only definite roentgenologic evidence of active ulcer is the demonstration of a crater as indicated by a small bead of barium usually located just proximal to the deformity. Evidence of healing, or rather of partial healing is given by the disappearance of the crater. The treatment of peptic ulcer is primarily a medical problem.

Gastric cancer causes more deaths than any other neoplasm of the body. Many of these deaths can be prevented by early diagnosis and early treatment. The symptoms of carcinoma are most insidious in onset and most indefinite. Any individual of "cancer age", that is anyone over thirty who develops so-called "indigestion", should be examined for cancer. Such an examination, as I have already implied, is not complete without an analysis of the stool for occult blood and a roentgenologic study of the digestive tract. Some means must be found for reducing the cost of the x-ray examination in order that it

*Presented at the 81st Annual Session of The Kansas Medical Society, Wichita, May 15, 1940.

may be used as routinely in the diagnosis of digestive disease as the Wassermann test is used in the diagnosis of syphilis. In the campaign against cancer we must not only use the x-ray routinely, but we must educate the public to realize that cancer can be diagnosed early and that surgery does offer hope of cure or at least of remarkable palliation. For instance in one of our patients, a man fifty years of age, a diagnosis of carcinoma of the stomach was made but the patient refused to submit to operation until nine months later. Nevertheless the carcinoma was resected and the patient lived for six and one-half years thereafter. In another instance, a large gastric carcinoma of the polypoid type was successfully removed six years ago, and the patient is still alive and well. On the other hand, in a third illustrative case, a large carcinomatous ulcer was resected, in spite of its location rather high on the lesser curvature, but the patient survived a little less than two years. Gastroscopy aided greatly in the diagnosis of a very early carcinoma which was resected later in another instance, a polypoid carcinoma was found gastroscopically in a patient with pernicious anemia. The roentgenologist was unable to demonstrate this lesion by x-ray, even after the gastroscopist had shown it to be present. Operation confirmed the diagnosis.

There has been a great amount of discussion lately of the subject of gastritis. By and large it is not of great practical significance at present. There is great reason to question the role of these various types of gastritis such as the superficial, hypertrophic and atrophic varieties, in the production of symptoms, and to question, also, whether therapy is of any avail. In the case of atrophic gastritis, however, there is evidence that it is related to achlorhydria, to pernicious anemia, and very likely to carcinoma of the stomach. Aside from the improvement which seems to occur often in cases following the administration of liver, or liver extract, or Ventriculin, there is no definitely recognized therapy.

Gall-bladder disease is a subject of great importance. There is no satisfactory evidence that chronic distress may be attributed to disturbances in emptying of the otherwise normal gall-bladder. The one important thing to know about the gall-bladder is whether it contains stones or not. The roentgenologic diagnosis of cholelithiasis is highly accurate. Stones may be diagnosed either by a visualization of the gall-bladder containing many non-opaque shadows, or by the demonstration of calcified stones, or by the finding of a non-visualization of the gall-bladder. The accuracy of a simple non-visualization of the gall-bladder is approximately ninety per cent. Occasionally a normal gall-bladder fails to visualize;

and hence, if the diagnosis is in doubt a second examination may be in order. The outstanding symptom of cholelithiasis and of gall-bladder disease is biliary colic. Therefore, the important question to ask in patients found to have gall stones is this: Does the patient have biliary colic? If so, and if no contra-indications are apparent, cholecystectomy is certainly the procedure of choice. Diet and various medicines are of little avail. The one satisfactory treatment of cholelithiasis is cholecystectomy. In the absence of biliary colic, however, an entirely different situation is present. The so-called gall-bladder dyspepsia, consisting of fullness, belching, and generalized abdominal discomfort, is probably not related to the gall-bladder at all, but is a bowel disturbance which may be corrected by regulation of the diet, regulation of the bowels, etc. The distinction between cholelithiasis and biliary colic on the one hand, and the so-called non-calculus gall-bladder or chronic cholecystitis and gall-bladder dyspepsia on the other hand is important. The first, that is biliary colic, should be treated surgically. The second, the dyspepsia, is probably not related to the gall-bladder at all and can be handled satisfactorily by medical measures. You will note that I have not mentioned so-called biliary dyskinesia or spasm of the sphincter of Oddi. This is because I am not convinced that the condition, if it occurs at all, is of any clinical significance.

Acute appendicitis is a definite indication for an immediate operation. Recurrent appendicitis is likewise an indication for appendectomy. In fact, appendectomy is in order if there is reasonable suspicion of acute appendicitis or of recurrent appendicitis. Indeed I should almost be willing to endorse routine prophylactic appendectomy, for the annual death rate from acute appendicitis is appalling. However, appendectomy is not likely to cure those individuals who have chronic, daily recurring abdominal distress even though it be fairly well localized in the right lower quadrant. In these patients the cause of the distress is usually not in the appendix.

Many such patients have regional ileitis. Fortunately, the terminal ileum is the portion of the bowel most frequently involved and can be examined easily roentgenologically. When higher portions of the bowel are affected the diagnosis may be quite difficult. In the present state of our knowledge, resection of the diseased portions of the bowel is indicated. However, the disease often recurs following resection and, hence, the patient should be given a long period of rest, high caloric diet, and general hygienic care such as one would give to a patient with tuberculosis. One endeavors in this manner to prevent a recurrence of the disease.

Regional ileitis may not be identical with, but it is very similar to, chronic ulcerative colitis. In the treatment of this disease rest is very important, preferably bed rest for a long period of time, in fact until the proctoscope shows the rectum to be normal. The diet should be a low residue non-laxative diet, high in caloric value and with adequate vitamin content. In the more severe cases the patients find it difficult to eat adequate amounts of food. Parenteral fluids may be necessary, and the parenteral administration of vitamins may be indicated. Blood transfusions are often of great value, particularly if anemia is present. In some patients who continue to have diarrhea for many years, ileostomy may be indicated, or even total colectomy. Both of these procedures are hazardous and should be undertaken with great reluctance. In the acute fulminating cases, surgery and indeed all other measures are of little avail. In the general management of ulcerative colitis psycho-therapy is of the utmost importance. These patients must be catered to; they must be encouraged; every possible effort must be made to maintain and build up their morale. The treatment of ulcerative colitis has been very aptly likened to that of pulmonary tuberculosis. Sedatives, such as phenobarbital, are of considerable value. Belladonna is helpful. A hot water bottle or an electric pad on the abdomen is usually soothing and worth using. Narcotics may be necessary for severe pain, but in the absence of pain are best omitted. Bismuth, kaolin, and similar powders are of relatively little specific value. The vaccines are likewise of no specific help. Neoprontisil, sulphanilamide, and sulphapyridine have not been found by us to be of definite or indeed of any value. The nausea and vomiting so often induced by sulphapyridine is harmful.

Chronic amebic dysentery is usually differentiated rather easily, in our experience, by the demonstration of *Endameba histolytica* in the stool either on direct examination or on culture and by the entirely different proctoscopic picture. Occasionally numerous stool examinations are required. If any doubt exists, therapeutic trial is indicated. Emetin given intramuscularly in doses of one grain daily for ten or twelve days and combined with the use of yarten or vioform is very satisfactory. Carbozone and other arsenical drugs are of value but occasionally give a very disagreeable arsenical dermatitis.

Lymphogranuloma inguinale, or lymphopathia venereum as it is now called, is seen not infrequently as a stenosing lesion of the rectum. The Frei test is a valuable and quite reliable diagnostic procedure.

Carcinoma of the colon is not as frequent as carcinoma of the stomach, but it is all too frequent and should always be suspected in patients with ab-

dominal distress. It is usually found readily by x-ray examination. However, it may be easily overlooked, often because the examiner fails to manipulate the loops of sigmoid free from each other. The continued presence of gross blood in the stool is very significant. Repetition of the examination may lead to the finding of the lesion. In one such patient, for instance, the carcinoma was resected six years ago and the patient is still alive and well. Proctoscopic examination is particularly valuable in carcinomas of the recto-sigmoid. It is usually not difficult to find the polypoid, bleeding edge of the ulcer.

Diverticulitis of the colon is not infrequent in patients having recurring attacks of acute lower left quadrant pain, tenderness, some rigidity, and fever. Usually the attacks subside with rest, the application of heat to the abdomen, and regulation of the bowel by means of diet. Administration of belladonna and phenobarbital is very helpful in the management of these patients. Diverticulosis is very common, but rather few develop the acute attacks of diverticulitis.

The great majority of patients with chronic abdominal distress will be found to have no organic disease to account for their distress. They are patients with what we choose to call a functional disturbance of the bowel. Their common symptoms are fullness or discomfort after eating, rumbling and gurgling of the abdomen, soreness of the abdomen, and very often cramp-like abdominal pain. There is usually definite evidence of stool disturbance such as a tendency to diarrhea, or, the patients may say they are constipated and cannot get their bowels to move. Frequently they are habitual users of cathartics. After organic disease has been excluded, the abdominal discomfort can usually be relieved by regulating the bowels so that normal, formed movements are obtained without the use of laxatives. It is a good plan to start these patients off with a bland diet consisting of cereals, custards, puddings, eggs, rice, macaroni, cheese, bread, butter, milk, cream, potatoes, and including a stipulated amount of cooked fruit and vegetables, as for instance two dishes each. If the stools continue to be hard and dry, it may be necessary to increase the amount of vegetables and fruits. If there is a tendency to diarrhea, the amount of fruit and vegetables may be decreased. Rest, and the application of heat to the abdomen, are valuable. Very often the patient is benefited by being instructed to lie down for an hour after each meal. Reassurance and kindly encouragement are of the utmost importance.

The majority of patients with psychoneuroses and functional abdominal distress are relieved by such procedures, and by the reassurance which comes both from the knowledge that organic disease is not

present, and from the relief of distress. Indeed if such measures do not suffice, usually the diagnosis is incorrect, or emotional factors are found to be over-powering. There are some individuals with such severe anxiety states, such fixed character disorders, and such marked neuroses that they border on the psychotic and belong truly to the province of psychiatry.

You will note that I have made no reference to allergic disorders of the stomach and intestine. We are all familiar with acute allergic manifestations to certain foods such as strawberries or shrimps, but there is reason to question the role of allergy in the chronic disturbances. In fact, I have never been able to convince myself that allergy ever plays an important role in chronic distress. The allergists themselves are divided on this question.

In conclusion, may I say that in no field of medicine is therapy more gratifying than it is in the diseases and disorders of the digestive tract. Peptic ulcer can usually be managed satisfactorily. Carcinomas can often be removed. Biliary colic can usually be cured by cholecystectomy. Inflammatory processes of the bowel usually respond to treatment. The functional disturbances can usually be handled quite easily. These individuals make most appreciative patients and amply reward the physician for the time spent in caring for them.

THE MANAGEMENT OF CONGESTIVE HEART FAILURE*

Thomas J. Dry, M.D.**

Rochester, Minnesota

Any pathologic process which is capable of producing heart disease may terminate in congestive heart failure; that is, congestive heart failure is the common denominator of all pathologic cardiac states. Although many patients who have congestive heart failure respond readily to generally recognized methods of treatment, others have conditions in which associated factors may require modification of the therapeutic approach, dependent on the intrinsic nature of the circumstances involved. It frequently has been observed that the patient who responds satisfactorily at first may not necessarily fare so well later as one who, at the outset, was perhaps more refractory to therapy.

A point of fundamental importance is recognition of the fact that with few exceptions the pathologic changes underlying cardiac disease not only are irre-

versible but are also progressive; another prime consideration is the fact that mechanism originally responsible for heart failure still will be present after compensation has been satisfactorily restored. Recurrence of failure is, therefore, not only possible but is actually likely to occur, under even less provocation than was required in the first instance. The only exception to this statement is provided by the existence of certain extracardiac factors which are capable at times of producing heart failure in themselves but which happen to be reversible, such as obesity, hyperthyroidism, myxedema, severe anemia or avitaminosis. These conditions may be disguised by the heart failure which they have produced or have helped to produce in conjunction with independent cardiac disease, so that they have to be kept in mind in the treatment of every patient who has congestive heart failure, especially when the patient's response to therapy is atypical or unsatisfactory. The surgical treatment of constrictive pericarditis also is at times attended by gratifying results and may thus be added to the list of reversible causes of congestive heart failure.

The pathologic processes eventuating in heart failure happen to be relatively few. Congenital defects, rheumatic fever and its sequelae, syphilis, hypertension and coronary sclerosis comprise almost the entire list. Each disease has its own natural history and mode of behavior and it is essential for the physician to be acquainted with all the phases of a disease so that he can deal correctly with situations as they arise. However varied the rate of progression of these diseases may be, the diseases in common result in an encroachment on the cardiac reserves with impairment of the pumping efficiency of the heart. Encroachment may result from direct myocardial damage or, secondarily, from interference with nutrition of the heart through involvement of the coronary arteries. Valvular and other mechanical difficulties, such as hypertension, add to the load which the heart must carry. Finally, the onset of an ectopic rhythm usually adds considerably to embarrassment of the cardiovascular apparatus.

For convenience of description, therefore, the treatment of heart disease may be discussed under two headings; first, management of congestive heart failure arising from any cause; second, management of cardiac states which, although they have not as yet terminated in congestive heart failure—and indeed may be asymptomatic—are nevertheless capable of producing it.

THE MANAGEMENT OF CONGESTIVE HEART FAILURE

What course of events leads to congestive heart failure? Expressed in simple terms, the heart in such

*Read before the meeting of the Leavenworth County Medical Association, Leavenworth, November 8, 1940.

**Department of Medicine, Mayo Clinic, Rochester, Minnesota.

circumstances is no longer able to expel the blood which is brought to it. As an inevitable consequence, the venous system becomes engorged, and when venous pressure reaches a certain level, fluids escape from the vascular system into the tissues, and later, into the serous cavities. One of the immediate consequences, as far as the heart itself is concerned, is anoxemia, which adds greatly to the difficulty. Metabolic disturbances, about which, unfortunately, very little is known, undoubtedly play an important role in the failure of cardiac muscle. The sequence of events which occur when the strain is exerted primarily on the left side of the heart, as in hypertension or aortic disease, differs in certain details from the sequence which is present when the strain primarily affects the right side of the heart, as in mitral stenosis or certain congenital defects. However, failure predominantly affecting one side of the heart leads eventually to failure of the other side, so that the heart may be regarded as a functional unit and treatment, consequently, may be said to be essentially the same in any case.

Treatment consists, first, in reduction of cardiac work to an absolute minimum, which means complete rest, physical and mental, for the patient. All the means at the physician's disposal should be resorted to in order to insure such rest. In the earlier phases of treatment the opiates surpass in usefulness all other forms of sedative agents. It is highly essential that some sort of reassurance be offered to the patient and also to his or her relatives. By explaining the objectives aimed at in simple terms, with warranted optimism, the physician can thereby allay some of the uncertainties and can obtain better cooperation.

The second phase of treatment should be directed toward elimination of fluids that have accumulated in the form of edema; thereby the peripheral resistance against which a crippled heart has been working is lowered. Diuretic agents in common use for the relief of congestive heart failure will be considered presently. At times it is necessary to remove by paracentesis large accumulations of fluid from the peritoneal and pleural cavities, after which diuretic agents often act more efficiently than otherwise would be the case. The intake of fluid must be controlled and the content of salt in the food must be low. The degree to which the intake of fluid should be limited is stated often in terms of a definite amount. This is a most unscientific practice; first, because the fluid requirement varies not only from one individual to another, but also from day to day; second, because dehydration is possible even if the subcutaneous tissues are edematous. Among some old patients especially, improvement will not

occur unless adequate amounts of fluids are administered. The patient complains of thirst and of a dry mouth; the retained fluids obviously are not supplying the water necessary to metabolic activity. In the case of a co-operative patient who has been given an opportunity to understand what the physician is trying to accomplish, the sense of thirst is the best guide for determination of the proper intake of fluid. The patient need merely be instructed to drink the smallest amount of fluid which will satisfy his thirst. A record should be kept of both the intake and output of fluids and if the ingested amount proves to be excessive, further admonition can then be exercised.

In view of the satisfactory results obtained with the use of diuretic agents, it is neither necessary nor wise to attempt elimination of fluids by catharsis. Appropriate amounts of mild laxatives, such as mineral oil or milk of magnesia, should be administered to keep the patient's stools loose enough to make it possible for the bowels to be evacuated without undue straining.

A third means of treatment is venesection, which occasionally can be resorted to with advantage when venous congestion is very great. For the patient to derive any benefit from this procedure, however, a sufficiently large amount of blood (300 to 600 c.c.) must be withdrawn rapidly, because the venous system soon refills by absorption of fluids from the edematous tissues.

MEASURES INTENDED DIRECTLY TO IMPROVE THE MYOCARDIAL STATUS

Oxygen.—In most instances the measures already mentioned will suffice. In the severe forms of failure, oxygen will help to bring relief more quickly than it would otherwise occur. The recent improvement in the technic of administration of oxygen makes this procedure a practical and relatively inexpensive adjunct to cardiac therapy. The psychologic effect, however, which this form of therapy has on the patient, must not be disregarded, since it has long been customary, popularly, to associate oxygen with the gravest forms of illness.

Glucose.—Glucose plays an important, although not clearly understood, role in the metabolism of heart muscle. There is unquestionably an added demand for glycogen when heart failure is present. It can be administered intravenously in a solution of ten to twenty-five per cent, in amounts varying from 300 to 400 c.c., or a more concentrated solution can be administered in smaller amounts, in which case the solution sometimes enhances the efforts of other diuretic agents. Glucose has a definite place in the treatment of the severe forms of coronary sclerosis and in such cases it will at times

relieve paroxysms of dyspnea when all other measures have failed.

After all evidences of congestive failure have disappeared, the therapeutic program consists essentially of gradual rehabilitation on the part of the patient to a status of living which is within the limits of his cardiac reserve. This will be discussed more fully in this paper under the heading of "Management of cardiac states which may eventually lead to congestive heart failure or to other cardiac emergencies."

DRUGS USEFUL IN THE TREATMENT OF HEART FAILURE

Many preparations have been used in the treatment of cardiac disease. Many of these have been a boon only to the drug houses which manufacture and advertise them. It is perhaps a wise policy to confine attention herein to those drugs which have withstood the tests of time and clinical experience.

Digitalis.—Digitalis is indicated in any form of heart failure except that which occurs after acute coronary occlusion. By increasing the tone of cardiac muscle, digitalis increases the amplitude of ventricular contractions. The improvement in the general circulation which results accounts for the diuretic effects of digitalis. The most dramatic effects of this drug, however, are encountered in cases of rapid auricular fibrillation, by virtue of depression of conduction, especially through the atrioventricular bundle (His), which follows administration of digitalis. This action is partly due to vagal stimulation and partly the result of a direct effect exerted on the conduction system. In most cases oral administration of one of the preparations of the powdered leaf of digitalis is entirely adequate; in cases of severe failure, especially when nocturnal dyspnea is a prominent symptom, four to six cat units of a suitable preparation may be given intramuscularly when the patient is first admitted to the hospital. This may be repeated on the next day, or the remainder of the digitalizing dose may be administered orally. In any event, unless digitalis has been administered previously, the digitalizing dose usually corresponds roughly to the number of cat units equivalent to one-tenth of the body weight of the patient in pounds. However, it is important to individualize in each case and to avoid amounts that will produce toxic symptoms. Old patients are more susceptible to the drug than are young people. When what seems to have been an adequate amount of digitalis fails to reduce the ventricular rate in cases of auricular fibrillation, it is wise to look for evidences of hyperthyroidism. A coupled rhythm, marked bradycardia, nausea and vomiting constitute the earlier evidences of digitalis intoxication. The

maintenance dose of digitalis varies from six to nine cat units per week and often is best tolerated when it is administered on two or three consecutive days of the week; but again, in such cases, individualization is necessary. A period of two to three days should elapse between initial digitalization and commencement of the maintenance program.

Mercurial diuretic agents.—Mercurial diuretic agents surpass all other drugs in diuretic effect. They act rapidly and yet are relatively nontoxic. One important contraindication to use of these drugs is the presence of renal damage, but it must be recalled that albumin, casts and erythrocytes frequently are present in the urine as results of congestive heart failure itself. A ten per cent solution of the sodium salt of orthohydroxy-mercuric-methoxy-propylcarbamylophenoxy-acetic acid (salyrgan), sodium trimethyl-cyclopentane-dicarboxylic acid-methoxy-mercury-allylamide-theophylline (mercupurin), and the sodium salt of pyridinedicarboxy-beta-mercuri-n-hydroxypropylamide-theophylline (esidrone) are the most commonly used mercurial diuretic agents at present. They are best administered intravenously unless there is difficulty in securing a suitable vein; under such circumstances the intramuscular route should be used. Sloughing occurs only when the solution escapes in the superficial subcutaneous tissues, especially if these tissues are edematous. A needle of small bore is much safer for intravenous administration than one of the large bore, since use of the former minimizes the possibility of causation of a leak through the punctured vein. The injection may be repeated at intervals of from two to three days, the initial dose being one c. c. and thereafter, two c.c. It is seldom necessary to use more than two c.c. In cases in which ascites is associated, the introduction of one of the mercurial diuretic agents into the peritoneal cavity may be more effective in the promotion of diuresis than would be administration of such an agent by another route. The procedure is safe, and merely necessitates dilution of the diuretic agent by withdrawal of some of the ascitic fluid into the syringe prior to injection of the diuretic agent. The best method of gauging the success of therapy is to determine the loss in the patient's weight, as well as to record both the intake and output of fluids. It is frequently noted that diuresis still continues after injection of a mercurial diuretic agent when clinical signs of congestive heart failure have disappeared. Indeed, such diuretic agents are used to great advantage in cases in which cardiac reserve is known, on the basis of the symptoms, to be diminished, but in which it is not possible to elicit actual signs of congestive heart failure. Every so often a patient in this category will eliminate three or more

liters of urine in the succeeding twenty-four hours; this occurrence indicates that congestive heart failure is actually present. This is also true in cases in which the patients are being followed after congestive heart failure has been controlled. At times the presence of long standing asthmatic bronchitis may obscure the presence of early congestive heart failure and in such a circumstance, again, diuretic agents may be very useful in establishing the fact that compensation is failing. The use of suppositories containing mercurial diuretic agents is effective, but suppositories seldom are indicated, since the methods already described are far superior. Moreover, if the patient is instructed to use suppositories in his own home, he invariably neglects to administer them soon enough when cardiac failure returns. In fact, it is false economy for the patient to break the routine of regular visits to his medical adviser. Intelligent use of the measures thus far considered, either individually or in combination, will suffice for many patients who are in, or have passed through, an episode of congestive heart failure. At other times supplementary means are necessary to obtain the same success in treatment.

Acid-producing salts.—Acid-producing salts have received wide favor and often they are employed routinely in conjunction with mercurial diuretic agents. Used alone, acid-producing salts may be effective in mobilization of fluid, but their action is less certain and less dramatic than that of the mercurial diuretic agents. It was thought that acid-producing salts effected diuresis by virtue of the fact that they cause a shift in the acid-base equilibrium toward the acid side. Ammonium chloride and calcium chloride have been administered on this basis. As a matter of fact, the biochemical principles involved in the use of these so-called acid-producing salts are very complex, and factors other than those pertaining to the acid-base equilibrium also are involved. Thus, Keith and Binger have shown that the acid radicals themselves have specific diuretic properties and that this is particularly true of the nitrate radical. Again, it should be pointed out that the cation as well as the anion may be of importance in diuresis. The cation, potassium, has been found to be absorbed readily from the intestine, to disappear quickly into the tissues and to be excreted rapidly by the kidney. This is not true of the cation sodium. For these reasons potassium nitrate and potassium chloride recently have replaced ammonium chloride as diuretic agents. It would seem that the more nearly normal the blood chemistry, the more likely it is that diuretic agents will be effective. When the concentration of chlorides is low or when alkalosis is present, ammonium chloride or

potassium chloride might produce better results than potassium nitrate. After the acid-producing salts have been used, administration of a mercurial diuretic agent often is far more effective than administration of mercurial compounds alone. Use of the so-called acid-producing salts is not, therefore, a haphazard matter and is greatly facilitated by determination of the value for chlorides and of the carbon dioxide combining power of the plasma, and also, if ammonium chloride is used, of the concentration of urea in the blood. The amount of these substances administered must be comparatively liberal to produce diuresis. Usually, two or three gm. in enteric-coated pills should be administered three times daily.

The xanthine group.—The xanthine diuretic agents have enjoyed for long the reputation of being vasodilators and diuretics. The former action has been questioned seriously and the latter is not in any way comparable to that of the diuretic agents which already have been considered. Theobromine sodiosalicylate (diuretin), theobromine with sodium bicarbonate, theophylline, theocalcin and aminophylline are some of the xanthine derivatives which have been accorded wide application in the treatment of congestive heart failure, as well as of coronary sclerosis and hypertension. One of the objectives to use of the xanthine preparations as diuretic agents is that the patient often cannot tolerate them in a dosage which will be effective in the production and maintenance of satisfactory diuresis.

THE MANAGEMENT OF CARDIAC STATES WHICH MAY EVENTUALLY LEAD TO CONGESTIVE HEART FAILURE OR TO OTHER CARDIAC EMERGENCIES

In this section, various cardiac states of different origin may be considered conveniently, since management of these states embraces essentially the same general principles as those which have been mentioned previously. Such states are found among patients whose hearts are compensated but who have disease which may eventuate in congestive heart failure. It includes those patients who previously have had congestive heart failure, and in particular, I refer to individuals who have rheumatic heart disease, congenital cardiac anomalies, hypertension, cardiovascular syphilis or coronary sclerosis, with or without the anginal syndrome. In short, I speak of a group of individuals who are faced with the problem of living within the limits of their cardiac reserve. Many of these patients are still in their productive years, and in the case of those who have rheumatic and congenital heart disease, the problem may extend to advice regarding the choice of a means of livelihood and a choice of particular forms

of recreation. Among old individuals, the disease involves, in many instances, an entire change in established habits of both work and recreation. Although such patients are considered as a group, it is obvious that individualization is essential to the therapeutic approach.

One of the first principles to recognize is that in such cases the physician is treating not only a disease but also a human being. Whatever the type of program outlined, it must at least be practical and reasonable, and I do not wish to minimize the necessity of the patient's making certain definite sacrifices. The simplest way out of the difficulty in established or even suspected heart disease would be for the physician to warn the patient to be careful and to adopt the attitude that, therapeutically, almost everything depends on his own course of action. To quote Sir Thomas Lewis: "A medical man who fails to warn relatives of a possible sudden ending may be a little blamed if and when the event occurs, but a doctor who sets out to safeguard himself against all risks of this kind, deliberately prefers his own to others' interests. Death without warning disturbs a patient's family enough; its long, and often unnecessary, anticipation inflicts more suffering."

The necessary facts which the patient should know about his heart disease and about the nature of cardiac function in general, usually can be explained in simple language without employment of technical terms which to him have only an ominous meaning; it is on this understanding alone that physicians can depend for co-operation. The physician's survey of a case must be complete enough to allow the giving of advice to the patient about specific events in his daily life. The most important points for consideration in this regard are these:

Exercise and rest.—The heart is a muscular organ and like all muscles it requires a certain optimal amount of exercise; in this particular type of cardiac disease it requires that amount of exercise which does not produce dyspnea, or in the case of coronary disease, that amount of exercise which does not produce pain. When patients are convalescing from rheumatic fever or coronary thrombosis, additional criteria are employed in determination of the amount of exercise to be allowed, dependent on the stage of convalescence. The responsibility is thus placed on the patient, but he should be acquainted with the "danger signals," so that he can recognize them and be guided by them without introduction of the element of fear. There should be a period of rest during the day, usually after the noon meal, its duration depending on the state of the patient's cardiac reserve. A good night's sleep must be ensured and a suitable sedative agent should be re-

sorted to by the patient whenever and as often as is necessary. Due consideration must be given to suggestions which will help the patient to develop habits conducive to relaxation, and for this, the physician's knowledge of the patient's previous habits is essential.

Diet.—The patient should be disillusioned in respect to any curative value which he may (and indeed, is likely to) attribute to dietetic measures. The most important instruction regarding diet is that large meals should be avoided, since a full stomach considerably augments cardiac work. Salt tends to increase any tendency toward the formation of edema; thus, there is a good reason for limitation of salt and for advice against the use of seasoned foods in general. The intake of protein should be moderate because of its specific dynamic action, but the metabolic requirement of the body must be supplied and this consists, roughly, in one average helping of meat a day. All other metabolic requirements must be met, including adequate intake of the necessary vitamins, but ingestion of excessive amounts of these dietary accessories will not bring added results unless a state of hypovitaminosis actually is present. The treatment of obesity must not be neglected.

Habits.—Moderation is the keynote in the matter of habits in general. Alcohol intelligently used in medicinal doses may be helpful in many cases of coronary sclerosis.

Intercurrent infections.—Congestive heart failure frequently follows otherwise trivial intercurrent infections, and patients should be instructed to stay in bed during such illnesses.

CONCLUSIONS

The physician's efforts will be rewarded well and his results of therapy will be successful if he can cultivate in his patients the right attitude toward their disability. The dramatic nature of heart disease inherently instills fear into the patient and his relatives, but in most instances it is possible by means of the correct approach to prevent the development of a type of neurosis which at times becomes disabling out of all proportion to the severity of the disease which the patient has.

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Of 165,576 total admissions to U. S. Veterans' hospitals during 1939, over ninety-two per cent were for disabilities not connected with war service.—*Ohio State Medical Journal.*

PRINCIPLES NECESSARY IN THE SUCCESSFUL MANAGEMENT OF COLON CANCER*

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This paper is addressed chiefly to the general practitioner and possibly a bit more specifically to those who are including in their general practice a certain amount of general surgery. I have tried to limit the remarks in this paper to proved, valuable, and quite necessary steps which we, as general practitioners, must utilize and which, when understood and adhered to, will allow us to manage successfully cases which only a few years ago were given up as hopeless or referred to surgeons and clinics highly experienced in such work.

For the most part the management of these cases is a rather complicated problem filled with pitfalls and hazards. The diagnosis and treatment of such vitally significant clinical problems require a rather highly developed "medical machine." Such machines or organizations are now present in many of our Kansas communities, thus no longer requiring the colon cancer sufferer to seek help from a distant medical center.

When we realize that management of these cases has been successfully done only within the last forty years and that this success has reached a certain brilliancy only within the last twenty years, it is not remarkable that we continue to hear occasionally a rather, old-fashioned, gloomy, and pessimistic attitude toward cancer of the colon and rectum. This feeling in turn causes many of us to fail to give our patient benefit of treatment which is entirely within our power.

FREQUENCY

Malignancy of the large intestine occurs about as frequently as malignancy of the stomach. In almost a fourth of all cancer deaths the primary tumor originated in the colon or rectum. This makes us realize that these cases are not rare and that we must prepare ourselves to diagnose the condition properly and to carry out immediate steps designed for cure.

No race is excluded, and the malignant tissue is found in such a wide range of ages that it must be searched for even in our young.

SYMPTOMS

Under this heading I first want to emphasize the significance which we must attach to blood in the stools. Regardless of the fact that blood in the stools

is by far more commonly associated with benign lesions of the rectum or recto-sigmoid, bleeding occurs early and in almost 100 per cent of the malignant cases. Do not be misled by the patient's saying that he has never noticed any blood, for the facts may be that the patient may never look at his stool. This bleeding is usually in the form of pink or red streaks or blotches, irregularly smeared on the surface of a formed fecal mass.

An error which has much too frequently been made and is evidence of unpardonable negligence is the subsection of a patient to a hemorrhoidectomy or some such rectal procedure without performing a digital examination or a sigmoidoscopic examination to be sure that no cancer exists.

Blood in the stool is noted by the patient in a high percentage of the cases where the lesion is in the rectum and is noted less when the lesion is higher in the colon. Gross bleeding is relatively infrequent as the site nears the cecum. Lesions in the right colon bleed, but this may be found only by testing for occult blood.

Next must be noted that the history of an altered bowel function is of great significance. We, who are general practitioners and are consulted by all types of sufferers, well realize that the great majority of our patients have some difficulty with their bowels. The case history should answer this question, "Has any change in the bowel habits been noted during the past six months or a year?"

In spite of how bad bowel habits may be, if the situation is essentially the same as it was several years ago, we can be quite well convinced that the trouble is not new growth; however, in spite of a long history of bowel trouble if a distinct change has recently been noted, then the physician must not be satisfied until a malignancy is excluded in the diagnosis. Such a change in bowel function is usually expressed by the patient as constipation, but it may be in terms of loose stools or diarrhea.

Abdominal cramps or pain of some type is relatively infrequent with the rectal lesion; however, in the right side of the colon this complaint is very frequent. When the patient recites a bizarre history of recent origin and constituting discomfort in the right abdomen, this should be a definite stimulus for us not to neglect the consideration of a lesion in the right colon. It is not unusual for a surgeon to find unexpectedly a carcinoma of the cecum or hepatic flexure when he is operating with the plan of removing an appendix or gall bladder. This then is another point, that is, when a patient is subjected to surgery for the appendix or gall bladder and those organs are found to be apparently normal, it is wise, indeed, to palpate the right colon following the hunch that perhaps this is the organ involved.

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It is very necessary to emphasize here the severe anemia which is so often found associated with lesions of the right colon. Just why this anemia exists is not well understood; however, it is a fact which must constantly be kept in mind, for very frequently the intense anemia is the paramount symptom. It is worth noting also that this symptom may make the patient appear much further advanced than actually the surgeon will find. As a rule we feel that marked anemia is a result of a late and probably inoperable lesion; however, when the lesion is in the right colon, this is not nearly so true.

Re-emphasizing again the importance of the four major symptoms of colon cancer, may I recite findings of the Lahey Clinic that in 97.7 per cent of the cases there was alteration in bowel function or abdominal cramps or pain or abnormal stools.

DIAGNOSIS

There are several gratifying points to realize when we consider the diagnosis of these lesions. First to be mentioned is the statistical fact that patients are presenting themselves to the physician at an earlier date in the illness; and second, therapeutic technique has advanced to the point where more cases are considered operable, and the end results are becoming constantly more satisfactory. At the present time out of these patients who present themselves for treatment, seventy-five per cent are considered resectable. The mortality rate runs between seven and ten per cent. The five-year cures obtained in the resectable groups is found to run well around sixty per cent. Such statistics are showing a constant improvement, and each of us must feel that he is a cog in the machine which will continue this advance.

The colon and rectum must be considered one of the more accessible parts of the body for diagnostic measures. The finger is the most valuable of all in making the diagnosis.

With no more than a clue to arouse our suspicion, and the slight ambition required to insert a finger into the patient's rectum, one should be able to diagnose almost eighty per cent of these cancers.

As simple as a digital examination is, I feel that I have learned certain very helpful points which I will mention. I have found it advisable to allow the male patient to stand on the floor, then bend over to lie with his abdomen on the examining table. The patient can be told to relax completely, and the pressure of his abdomen on the table will force down the recto-sigmoid to the point where it is surprising how high a lesion can be situated and yet felt with the tip of the finger. It is my practice to insert my finger with the flexor surface down and first examine the prostate and rectal wall above the prostate.

The next step is important, that is, turning the hand over and maneuvering the finger up along the curvature of the sacrum. It has repeatedly been demonstrated to me that this procedure will allow me to feel lesions several inches higher than would have been possible had I not carried out this examination properly. The sigmoid colon will telescope down, making it possible frequently to feel a lesion which is situated six or eight inches from the rectum. Do not slight the technique of a digital examination.

When the lesion is low enough to be palpated through the rectum, the examining finger tip finds a hard, grisly, craterous deformity with the surrounding elevated margins. The withdrawn finger tip will show a little pink or true red blood, and this may be the first evidence to the examiner or to the patient that bleeding has occurred. Use finger cots rather than gloves. Finger cots are cheap. A supply can be kept in the vest pocket; and when one has a rubber stall handy, one is more likely to examine the rectum.

For the female patient, it has been my practice to follow a pelvic examination by examining the rectum. The usual lithotomy position is very satisfactory for rectal examination.

The sigmoidoscopic examination and biopsy are additional steps and relatively easy ones. The patient must be in proper position for satisfactory sigmoidoscopic examination. I prefer the knee chest position with the knees spread some and the arms over head.

The patient is asked to let his belly wall sag and his back sway so that the sigmoid will drop out of the pelvis. When carefully, and rather expertly done, this procedure need not cause the patient any concern. The operator best begin by telling the patient that there will be no real pain and that if the examination begins to be uncomfortable, it will be stopped at once. I have a rather set monolog which I carry out and continue through all of the examination which I, for the most part, learned from a former associate who aptly called it "vocal anesthesia". It is well to begin by saying, "I am going to slip an instrument into your rectum which is just a little larger than my finger. It will not cause you any pain, however, may give you an uncomfortable feeling as if your bowels want to move or as if you want to pass your urine, etc."

When the examiner keeps up that sort of talk, he stays one jump ahead of the patient; and with rare exceptions there is no objection to the examination. Insert the instrument as quickly as possible and do most of the looking as you withdraw the instrument.

My feeling is that we all should use the sigmoidoscope more frequently. The more we use it, the easier it becomes and the more exacting our diagnosis will be. It is an impressive examination to the patient; and if done without real discomfort, a good deal of psychological therapy will be effected.

An additional piece of equipment to use with the sigmoidoscope is a long biopsy forcep with which you can snip off a piece of the lesion and have it subjected to microscopical examination. Obtaining this biopsy does not cause the patient any pain and what little bleeding occurs is of no significance. I always have such a forcep at hand and have frequently obtained a biopsy with the patient totally unaware of the proceeding. Realize that the pathologist does not need a large section with which to make the diagnosis.

The x-ray is the next step from a diagnostic standpoint. I will say very little about this procedure. It is not necessary—in fact, inadvisable—to attempt an x-ray of the colon if the lesion is low and is showing considerable obstruction. As I said before, you can feel eighty per cent of the lesions through the rectum, and you can see a higher percentage with the sigmoidoscope which will give all the information that is necessary. The danger of putting barium into the bowel from either below or above, when the lesion is partially obstructive, can readily be seen. Putting barium into the colon may abruptly transform a partial obstruction into a complete blockage which then may require immediate attention. Early lesions of the right colon must be located with the x-ray, and this may be difficult. When a lesion is strongly suspected in this area, it may be necessary to repeat the barium in two or three weeks.

PATHOLOGY

I must beg forgiveness for treating so lightly such an important phase of any disease. For our purposes, however, it will be necessary to say only a few words regarding the pathology of these cancers. By far the most common are adeno-carcinomas, originating from mucosal glands.

The one outstanding fact from a pathologist's standpoint is the present feeling that most cancers of the colon and rectum arise from a benign adenomatous polyp. It is surprising how many of these are encountered during routine sigmoidoscopic examinations, and it is always advisable to remove them and cauterize the base. With the electric needle this is easily done, and a few sparks across the pedicle will completely sever the polyp from the bowel mucosa. When such a polyp is removed, the patient has certainly been spared one possibility of a cancer.

The developing cancer may either assume a cauli-

flower, craterous, or annular form. The annular, cirrhus type naturally is more prompt in producing obstructive symptoms. The polypoid, cauliflower type, as a rule, is the least malignant.

I will mention the pathological grouping of cancer which has been suggested by Dr. Broder. By this means the pathologist makes an effort to grade the tumor with regard to its malignancy. Dr. Broder classifies all of these malignancies in four groups according to their relative viciousness, Group IV being the most malignant and Group I, the least malignant. Remember that a cancer is a cancer and capable of local invasion and distant metastasis in spite of what the pathologist may say about its virulence. I do use the Broder classification, and I feel that it is a distinct help particularly in evaluating the prognosis of each case. The pathological grade does not influence my treatment; however, the removal of a Grade I or II lesion allows me to be more optimistic than if the lesion is a III or IV. This particular type of classifying tumors is not universally accepted; however, I believe that it is receiving more and more favor throughout the world.

TREATMENT

I feel that many of us general practitioners in the smaller communities, and with relatively inconspicuous surroundings and equipment, can feel justified in understanding the fundamental principles involved in the specific therapy and have every right to proceed toward eradication of many of these growths. At times, recognizing our limitations, we must refer the case to a larger medical center for more expert handling.

A few of the fundamentals best be reviewed. In 1910 a tremendous advancement was made by Miles when he presented his work regarding the invasion of a colon cancer.

Miles demonstrated three modes of extension. (1) The tumor can radially invade out through the bowel wall and the surrounding tissue. This it does with relative ease, and it is this fact that has implored wide surgical removal of the tumor. Local invasion peripherally is slow, and it may take six months for the tumor to extend half way around the bowel. (2) Extension through the lymphatics is a fairly early occurrence. However, the growth tends to remain localized to the adjacent nodes which then implores the surgeon to include the local gland-bearing area along with a wide excision of the growth. (3) The third mode of invasion is through the veins which then put the malignant cells in its portal circulation. In an abdominal exploration if a metastatic nodule is found in the liver, of course, the case is inoperable; but from a therapeutic standpoint, when the lesion is considered resectable, it is

the local invasion and the local node-bearing tissue which is of importance.

Any discussion of treatment for these lesions brings up at once the surgical attack necessary. This then must begin with pre-operative preparation of the patient.

The patient must remain in the hospital about one week prior to surgery. He can be up and around but should rest much of the time. His diet should be essentially a non-residue schedule. The diet consists of fruit juices, sugar, candy, clear broth, boiled rice, toasted white bread, jello, and tea. In spite of the apparent paucity of such a diet, the patient will gain weight as a rule. This weight gain is sugar and water which is very desirable.

A cathartic is given each night, senna being very satisfactory. Irrigations each morning overcome any tendency to obstruction.

When first seen, the patient may seem to present an alarming degree of obstruction. Do not be quickly led into doing a palliative colostomy. A decompression schedule of irrigations, gastric lavage, bowel sedation, intravenous fluids will usually remove the acute situation, and the patient can be prepared for a curative type of procedure.

The patient should be observed and evaluated for a better surgical risk. Laboratory procedures should be done and a suitable blood donor obtained.

Peritoneal immunization is an old idea, but more recently endorsed by the Mayo Clinic. I continue to use this although there are many who feel it not worth while. I use a few drops of stock "cold" vaccine, diluted with a few c.c. of saline. This is given directly into the peritoneal cavity forty-eight hours before surgery. The patient develops a mild peritonitis, as a rule completely subsiding in forty-eight hours.

At the present there is a popular demand for a coli-bacteragen (Steinberg) which is poured into the abdominal cavity in case any gross soiling has been done. This product forms a prompt defense reaction through the peritoneal cavity. We have used this once in a badly contaminated abdomen, and the patient lived! The general favor, which this product has at present, makes me feel justified in keeping some on hand.

Before attempting surgical removal of these tumors, I presume that most of us will of necessity do what I have to do—that is, review the anatomy of the particular area involved.

We must refer to and study anatomical sketches before removing a lesion in the colon. Particularly is it necessary to review the blood supply. A remarkable feature of colon surgery is that in spite of the rather extensive procedures involved, there

is relatively little ligating to be done. When the main vessels are caught, there remains only harmless venous oozing to contend with, and this rather quickly subsides following a little pressure with a warm, moist pack. As a rule there is less bleeding in a combined perineal abdominal resection than there is in a simple amputation of the breast, and certainly there are far fewer ligatures required.

The surgeon must have a tremendous respect for the peritoneal cavity, and whatever his procedure may be, the general peritoneal cavity must be protected from general contamination. With this thought in mind, every expert in this field has devised his own technique and pet methods for assuring against a catastrophe. Here again, however, it is remarkable how little disturbance is caused from even a bold procedure when the surgeon respects the cardinal principles which nature provides in the behavior throughout the peritoneal cavity. The peritoneal cavity has a beautiful and very efficient defense mechanism of its own which must be enhanced and not interrupted.

There are hundreds of fancy instruments, gadgets, and complicated devices to assist in technical removal of these growths; however, in the main the general surgeon will do much better with a basic understanding of the difficulties encountered rather than an operating room full of such equipment. For the most part only a few well-chosen instruments are necessary.

It is my dictum that the easiest procedure, requiring the least mechanical manipulation and allowing the least possible chance for peritoneal contamination which will still remove adequately the growth and node-bearing area, is the method of choice.

When first considering the surgical problem involved in the extirpation of these tumors, one becomes almost overcome by the apparent complexity and variation of procedures discussed. As one studies the matter more thoroughly, it is apparent that actually the operative procedures can be simmered down to basically only a few. All the rest are modifications and embody little differences which are not important in this paper. In the hands of the master surgeons there is a trend toward doing the whole job in one procedure or a so-called one-stage operation. A few years ago these men were a little more cautious and depended more on two or even three-stage programs. Personally, I have more confidence in my work being done in stages, and with rare exceptions I will not feel experienced or bold enough to attempt the one-stage type of resection.

The first procedure which I wish to mention is removal of the right side of the colon for malignancy in the cecum or ascending colon. Dr. Lahey has re-

cently proposed a one-stage procedure which he used for this type of resection. In spite of my belief in two-stage operations, the simplicity of this technique greatly appeals to me. In this procedure there are relatively few ligatures and no bowel anastomosis. It is essentially an exteriorization procedure and is much simpler than the older two-stage plan which first called for a short circuiting iliocolostomy and later a resection of the right colon. At a later date the spur of the colostomy is crushed and the fistula closed in the same way that must be done with any exteriorization procedure.

In the descending colon and sigmoid one always hopes that the affected segment of the bowel can be delivered through the wound and in the fashion after Mikulicz. This Mikulicz procedure I am sure you are all familiar with, for it is one of the oldest and also one of the easiest performed procedures. I believe that most men now prefer to clamp the bowel and excise the tumor, leaving the clamps closed rather than allowing the growth to remain on the wound as Mikulicz first suggested. Use of clamps permits a wider excision of the bowel segment with the gland-bearing section of mesentery included. A three-bladed Rankin clamp is ideal for such a so-called obstructive resection.

A double-barrel colostomy results from a Mikulicz or obstructive resection. The eventual closure of this colostomy is usually begun by the method of clamping out the spur between the two loops of the bowel which allows the fecal stream to be re-established through the lower loop, and thus prepares for the final closure of the colostomy.

When the lesion is low in the sigmoid or near the rectum, it becomes more difficult and less desirable to attempt excision of the tumor-bearing area with end to end anastomosis. The master surgeons are becoming more expert, and statistics show gratifying results in doing this type of low anterior resections. The technical difficulties involved in doing an anastomosis deep in the pelvis and the difficulty in removing enough gland-bearing tissue make a procedure such as this a formidable one for me. There are many such procedures which have been devised and are used by various operators, all of which hope to remove the entire growth with the node-bearing area and to re-establish the continuity of the lower sigmoid which thus preserves the normal anus. It sounds good, but it is difficult and treacherous to do.

When the sphincter is preserved rather than being sacrificed, there is a decided difference in five-year cures. In other words such procedures when done by the majority of surgeons may have given the

patient his normal rectum but paid his life for the luxury.

Actually, when a colostomy is performed through a stab wound, according to the newer methods, there is very little inconvenience involved with an artificial, abdominal anus. Hundreds of people throughout the country have sacrificed their anal canal in order to be cured of a cancer, and a majority of these will tell you that the colostomy gives essentially no concern. Frequently, no complicated rubber bags or devices are necessary, and bowel function has a regularity which I know would be a welcome treat to many of the bowel-conscious worriers who have a perfectly normal rectum and anus. When possible, by all means, the anal mechanism should be preserved; however, never should such a sacrifice in any way alter the surgical attack.

The rectal growths, or those situated low in the sigmoid, will require some type of combined perineal-abdominal procedure. Some surgeons prefer to do this in one stage according to the Miles' technique; however, in my hands I feel safer making two procedures in the manner popularized by Rankin, that is, doing a first-stage, permanent colostomy and later a combined resection. There are all sorts of modifications of this procedure; however, I see no reason to digress from the Rankin technique. It seems like an immense procedure; however, with the general surgeon becoming more and more capable, I feel that he can prepare himself to handle such an attack.

Another procedure I think we should definitely understand is the Lockhart-Mummery perineal excision for cancer of the rectum. This procedure has several advantages, however, is actually more difficult than the perineal-abdominal procedure of Rankin. The first stage consists in the establishment of a double-barrel colostomy, and the second stage removes through the perineal route the anus, rectal tumor, node-bearing area. In doing this the peritoneum is opened in order to amputate as high up on the sigmoid as possible, and then the sigmoidal stump must be inverted and the peritoneum closed which is the difficult part of the procedure. A short blind lower sigmoid segment is left in this procedure.

Dr. Lahey is at present a strong advocate for placing the artificial anus in the perineum. He feels that his results are proving good. The technique is ingenious although complicated and a bit treacherous. For myself, I shall prefer at present the abdominal anus, and when properly done and properly cared for, I feel this has no serious objections.

The preceding measures are all intended to remove completely the cancer and are used primarily

for those lesions that are considered resectable. The surgeon is occasionally confronted with a case in which he must consider some palliative procedure. The most common palliative procedure is simply a colostomy to overcome obstruction. The easiest to perform is the so-called loop colostomy. When possible the bowel should not be opened for about forty-eight hours. It is occasionally advisable to resect a growth in spite of metastasis being present. I had one such case recently on which I did a perineal excision of the primary growth followed by radiation therapy to the pelvis. The procedure accomplished the purpose which was intended, that is, to relieve the patient from his incessant tenesmus and desire to strain because of a large rectal cancer. The liver metastasis or metastatic involvement may not seriously affect the patient for many months.

I have not mentioned the use of x-ray and radium in the treatment of lesions of the colon. In closing, I wish to comment on this important type of therapy.

The first point of importance is that irradiation therapy is applicable only to the rectal and lower sigmoid lesions. Where the growth can be exposed and treated adequately by radium emanations and followed by deep x-ray therapy, I believe the results are becoming very encouraging. We physicians who lean toward surgery must realize that some clinics are actually favoring irradiation therapy in the treatment of cancer of the rectum. Statistics from some large x-ray therapy centers show a percentage of five-year cures comparable to those of surgery. We must keep irradiation therapy in mind, not only as an adjunct to surgery but actually of curative value itself. One definite field for irradiation is in those patients who are too grave a risk for surgery, or when our plan of attack is purely of a palliative nature.

In conclusion, I wish to urge again a more universal optimistic feeling among physicians in the important field of colon cancer. In order to warrant this optimism, we must all better acquaint ourselves with the diagnostic and therapeutic measures applicable to the management of such lesions.

The American Red Cross, acting at the request of the Surgeon General of the U. S. Army, has announced experimental plans for the promotion of a nationwide corps of volunteer blood donors which would become part of the national defense program, when and if needed.

Recruiting donors will be conducted by a special chapter blood transfusion committee which will include leading local physicians. The technical phases of the project will be performed by the medical staff of the cooperating hospitals. They will examine the prospective volunteers, make the necessary blood tests as well as doing the actual transfusions.

RADIATION OF LEUKEMIA*

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The purpose of this paper is to review some of the literature on leukemia and present some factors of interest in x-ray therapy of a group of twenty cases.

DEFINITION

Leukemia is a fatal systemic disease characterized by increase in the number of leukocytes together with enlargement and proliferation of lymphoid tissue of lymphatic glands, spleen and bone marrow (Dorland). There are three distinct types of leukemia, termed myelogenous, lymphatic and monocytic. Acute and chronic forms may be differentiated in each type, depending upon the duration of the disease and the mode of onset.

ETIOLOGY

The etiology is unknown. There are four theories; (1) neo-plastic; experiments have been made whereby a single malignant white blood cell from a leukemic mouse has been transferred to a normal animal. The latter will develop leukemia and die within a few weeks. This leads to the assumption that at least a single cell undergoes malignant transformation in an adult individual. (2) infectious. (3) hereditary, (4) virus.

DIFFERENTIAL DIAGNOSIS

What are the diseases which may be confused with leukemia and how may the differential diagnosis be made? Infectious mononucleosis is a disease which may be confused with leukemia. It may be determined through the use of the heterophile antibody test (Paul and Bunnell, 1932), the peroxidase or oxidase reaction, predominance of immature leukocyte cells, presence of nucleated red blood cells and platelet count. The blood platelets are, as a rule, not affected in infectious mononucleosis. Anemia develops rapidly in acute leukemia, whereas in mononucleosis this is not a factor. There is a tendency for spontaneous purpura or other hemorrhages present in leukemia which are not present in mononucleosis. Biopsy of a lymph node or a substernal puncture of bone marrow may be useful in differential diagnosis but often this is not necessary.

Other diseases which may simulate leukemia are acute disseminated miliary tuberculosis and whoop-

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ing cough. When the latter is complicated by bronchial pneumonia the leukocyte count may vary from 10,000 to 300,000 per c. mm. of which a high percentage, (up to seventy to eighty per cent) may be lymphocytes.

Agranulocytic angina may be confused with acute leukemia. Acute agranulocytosis does occur as a complication in an otherwise frank case of either chronic or acute leukemia. In agranulocytic angina ninety per cent or more of the leukocytes may be present in mononuclear forms. One must be very cautious in interpreting such changes as they may be mistaken for manifestation of leukemia. In order to avoid error a careful study of the details of a blood picture as well as a full history, especially with regard to the taking of drugs, will give a clue to the correct interpretation.

Neoplasms, multiple myeloma, osteosclerosis, lymphosarcoma, Hodgkin's disease, poisoning with chemicals and pyogenic infections may present leukemoid blood pictures which may be confused with leukemia.

PATHOLOGY

The pathology of leukemia is characterized by the ability of the predominant immature white cells to infiltrate in any of the viscera, bones, spinal cord, meninges, and skin. The teeth and nails are the only exceptions to this infiltration.

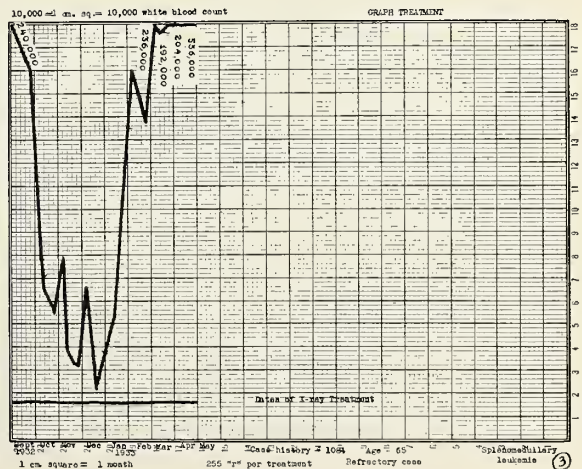
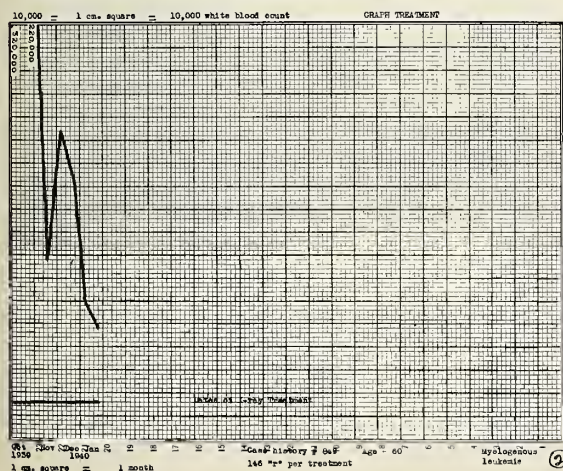
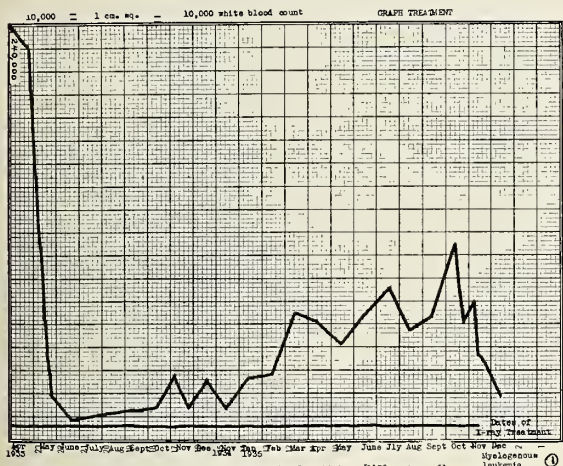
The yellow fat marrow of the long bones is replaced by cellular greyish pink tissue. The granular myelocytes and polymorphonuclear leukocytes predominant in the myelogenous forms while in the monocytic and lymphocytic the non-granular mononuclear cells are most numerous. The spleen is usually enlarged and the lymph nodes and lymphatic tissue vary greatly in the degree of involvement. The involved tissues show a hyperplasia with increased fibrosis, infiltration of immature white cells, and destruction of the germinal centers, which obliterates the normal architecture. Hemorrhages are common in the skin, in mucous and serous membranes and in ocular fundi.

THERAPY

Since the etiology is unknown there is no specific therapy for leukemia. At best the therapy is symptomatic.

Deep x-ray therapy was used in the cases studied — an application from 135 to 302 roentgen units per treatment at irregular intervals, once, twice, or three times weekly, depending on the decrease in the white blood count. All cases were treated locally, i. e., the spleen was radiated anteriorly, posteriorly, and laterally. The technique used was (1) 170 K.v.P., fifty cm. distance, a filter of $\frac{1}{2}$ mm. copper and one mm. of aluminum (2) 200 K.v.P., fifty cm. distance, filter Thoraeus A (one mm. aluminum, 0.2 mm. Sn., .25 mm. cu.), using twenty milliamperes with both K.v.P.

Dale (University Oslo) advocates total irradiation at frequent intervals which he claims gives longer



and better remissions. This is supposed to cause fewer immediate unfavorable reactions such as malaise, nausea, headache, and dizziness. The majority of the cases treated at the Trueheart Clinic had slight, if any, reaction to local irradiation at irregular intervals.

The age variation is from twenty months to sixty years. There are only two cases of lymphatic leukemia while the remainder are splenomedullary or myelogenous. The duration of symptoms prior to the diagnoses varied from a few weeks to as much as four years. The average duration of life in this series was 2.7 years after the onset of treatment. In several cases, included in the above average, there is an incomplete record of the patient's progress.

Leukocyte counts were made at each treatment in order to help determine the frequency of x-ray therapy.

The accompanying diagrams and case reports represent (1) good response to x-ray therapy, (2) medium, (3) refractory.

CASE HISTORY

(1) White—male—age sixty-one. Duration of symptoms prior to treatment was two years. Positive findings on physical examination are: spleen extends to within seven cm. of the pubes and three cm. to the right of the midline. W.B.C. 240,000; R.B.C. 4,000,000; Hb. seventy per cent. Wt. 153½. Stained smear shows chiefly myelocytes, myeloblasts, and young polymorphs. Urinalysis: Sugar negative; albumin one plus; numerous hyaline and finely granular casts.

1933

Blood Counts:

April 25—x-ray tr.—286 "r"
 April 28—x-ray tr.—286 "r"—W.B.C. 170,000
 May 2—x-ray tr.—286 "r"—W.B.C. 136,000
 May 5—W.B.C. 98,000
 May 12—W.B.C. 38,000
 June 15—(By family doctor) W.B.C. 8,900
 Nov. 16—x-ray tr.—222 "r"—W.B.C. 14,000

1934

Patient went for a period of more than a year without any x-ray treatments. Maximum count was W.B.C. 14,200; R.B.C. 4,160,000; Hb. eighty-four per cent.

1935

Patient did not receive any x-ray treatment until Oct. 28, 1935. W.B.C. increased from 27,650 in Jan. up to 64,000 in Oct. R.B.C. varied from 4,391,000 to 5,160,000; Hb. varied from eighty-two per cent to ninety-four per cent.

Oct. 28—x-ray tr.—282 "r"
 Oct. 31—W.B.C. 65,000
 Nov. 1—x-ray tr.—282 "r"
 Nov. 2—W.B.C. 37,750
 Nov. 9—x-ray tr.—282 "r"—W.B.C. 27,000
 Dec. 14—W.B.C. 19,500

1936

W.B.C. increased from 19,500 in Dec., '35, to 98,800 in Sept., '36. R.B.C. 4,550,000; Hb. ninety-five per cent. Hb. varied from ninety-five per cent to eighty-two per cent.

Sept. 25—x-ray tr.—217 "r"
 Sept. 28—x-ray tr.—217 "r"
 Sept. 30—x-ray tr.—217 "r"—W.B.C. 78,000
 Oct. 3—W.B.C. 49,000
 Oct. 5—x-ray tr.—217 "r"
 Oct. 9—x-ray tr.—217 "r"
 Oct. 13—W.B.C. 27,000

1938

Returned on January 18. W.B.C. 450,000; R.B.C. 2,920,000; Hb. fifty per cent. Received three x-ray treatments approximately two to four days apart. January 29. W.B.C. 160,000.

Total of nine x-ray treatments in a period of three weeks brought the count down to 67,000.

March 21. Count by family doctor was R.B.C. 4,330,000; W.B.C. 5,350; Hb. seventy-eight per cent.

August. W.B.C. 197,000; R.B.C. 3,160,000; Hb. fifty-six per cent. Received five x-ray treatments during August, 1938.

September 13—W.B.C. 301,000; R.B.C. 3,870,000; Hb. seventy-four per cent. Wt.—148 lbs.

1939

January 7—W.B.C. 514,000; R.B.C. 3,330,000; Hb. sixty per cent. Received four x-ray treatments.

January 16—W.B.C. 150,000—followed by two more x-ray treatments.

W.B.C. 98,000; R.B.C. 2,750,000; Hb. fifty-five per cent.

Patient's white blood count is dropping along with a decrease in red count and hemoglobin so he was sent home for a rest without any further treatment.

March 1—Count by family doctor—W.B.C. 12,300; R.B.C. 4,050,000; Hb. sixty-six per cent. Wt.—153 lbs.

April 12—Returned. Spleen measured eleven cm. below the left costal margin—W.B.C. 220,000; R.B.C. 3,030,000; Hb. sixty-two per cent.

Received five x-ray treatments (each of 204 "r") in the month of April. Count at the end of this series of treatments was W.B.C. 53,000; R.B.C. 3,790,000; Hb. seventy per cent.

May 10—Count by family doctor—W.B.C. 35,150; R.B.C. 3,150,000; Hb. sixty per cent.

October 23—Patient expired.

CASE HISTORY

(2) White—male—age fifty-five. Onset of symptoms in June, 1939—weakness, shortness of breath, pain in upper left quadrant, constipation, anorexia, loss of weight (39 lbs.). Examination: B. P. 124/80—Pulse 90. Heart and lungs are negative; large palpable mass in the left quadrant—liver margin—not palpable. Diagnosis of myelogenous leukemia made at the Hertzler Clinic.

Blood counts varied as follows:

November 9, 1939—W.B.C. 220,000	
R.B.C. 2,660,000	Hb. 56% Sahli 146 "r"
November 20, 1939—W.B.C. 78,000	
R.B.C. 3,080,000	Hb. 60% no tr.
December 4, 1939—W.B.C. 134,000	
R.B.C. 2,680,000	Hb. 58% 146 "r"
December 18, 1939—W.B.C. 111,000	
R.B.C. 2,570,000	Hb. 62% 174 "r"
January 2, 1940—W.B.C. 62,000	
R.B.C. 3,030,000	Hb. 68% 146 "r"
January 21, 1940—W.B.C. 54,000	
R.B.C. 3,090,000	Hb. 60% 146 "r"

Report from family physician—White count has decreased to 10,000—patient has received large doses of Lextron, Fowler's solution, injectable liver extract e.g. reticulogen, by his family doctor.

CASE HISTORY

(3) White—female—age sixty-five. Duration of symptoms prior to treatment was unknown. Positive findings on physical examination revealed a large mass in the left side which comes about an inch to the right of the median line and comes down to about an inch and a half to the pubes. Her initial white blood count was 240,000. Patient received x-ray treatments approximately every two weeks during February, March, April, and May, 1933. Count proceeded to go up to 536,000 (W.B.C.). Patient expired six months later.

Those cases which were partially or wholly refractory to therapy lived but a short time, usually a few weeks or months. X-ray usually reduces the total white count, thereby increasing the red count and hemoglobin. There would seem to be some correlation within wide limits that the degree of anemia will vary with the increase or decrease of the white count which helps indicate the degree of exacerbation of the disease. In those cases in which the leukocyte count approached the normal count after x-ray therapy, the spleen diminished in size, and in some cases, was not palpable and there was increase in hemoglobin, red blood count, and weight with marked improvement in the general condition of the patient. All cases treated were ambulatory.

After patients have been treated numerous times, at intervals of two or three months over a period of several years, the effectiveness of treatment tends to diminish. This depends on the degree of cooperation of the patient and will vary greatly, and also depends on the relative acuteness or chronicity of the disease. Usually this means the terminal phase, which may be accompanied with increasing weakness and death, sometimes without fresh hyperplasia of the spleen or lymphoid structure.

Most of the cases studied were referred and consequently additional supportive treatment was usually administered by the family physician. This consisted of the use of Fowler's solution, liver extract, parenterally, and massive doses of iron by mouth or intravenously. Patients should avoid fatigue, both mentally and physically. Naegeli recommends exposure to sunlight to check hemorrhagic tendency. Calcium is often given in large doses.

We feel that irradiation causes a definite increase in the duration of an efficient life, a period of usefulness and comparative well doing, which the patient would not otherwise have.

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The unusual occurrence of a patient suffering four relapses of pneumonia, due to four different types of pneumococci, all within a period of fifty days, is reported in *The Journal of the American Medical Association* for March 1 by Edward Bigg, M.D., and Roger A. Harvey, M.D., Chicago, who state that recurrent attacks of pneumonia are extremely common but that a relapse is rare.

They define relapse as an affection of the same or different lobe of a lung a few days after the original infection has subsided. In contrast to this, a recurrence can take place years after the first illness.

The authors stress the importance of repeated laboratory studies of the sputum for the identification of the pneumococci in possible cases of relapse so that appropriate serum drug treatment can be given.

EUCUPIN INFILTRATIONS IN ABDOMINAL SURGERY

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One of the greatest disasters in abdominal surgery has always been the development of some type of pulmonary complication. According to Cutler and Hunt¹, four per cent of all patients who have had laparotomies, and eight per cent of all patients who have had epigastric operations develop pulmonary complications, while Rovenstine and Taylor² reported six per cent minor and major complications in a large series of cases.

In a study of 100 cases of routine abdominal surgery, Overholt and Veal³ showed that there is always a marked reduction of pulmonary ventilation post-operatively. In 1927, Churchill and McNeil⁴ stated that they believed that the chief causal factor concerned in the great reduction of vital capacity post-operatively was the splinting of the abdominal musculature. It is estimated that the diaphragm is responsible for sixty per cent of the ventilation of the lung normally, and it is true that conditions such as distension, peritoneal irritation, and abdominal wound pain which alter intra-abdominal pressure or abdominal-wall tonus, will influence diaphragmatic excursion and vital capacity. In 1929, Coryllos and Birnbaum⁵ stated that 'circulation and ventilation of the lung are parallel functions; when ventilation is impaired, circulation is decreased and conversely.'

It is generally agreed that pulmonary complications are brought about by the slowing of the venous circulation. If the internal coat of a blood vessel is injured, the altered endothelial cells act as a foreign substance. If there is circulatory stasis at this point, an agglutination occurs. This is followed by clot formation⁶.

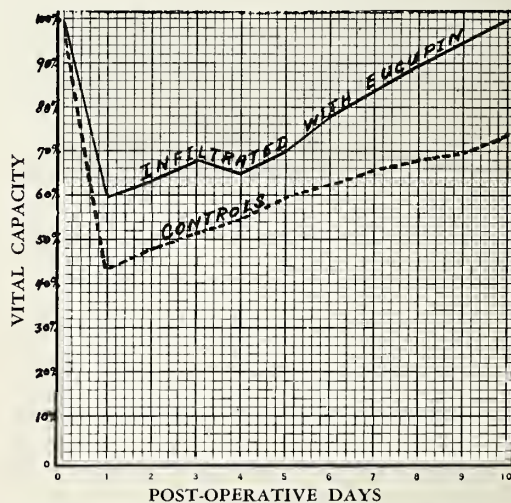
Inactivity of the patient and decreased movements of the diaphragm are the outstanding factors in slowing of the venous circulation. The restricted movement of the diaphragm also interferes with the normal drainage of the respiratory tract. This likewise is an important etiological factor in early post-operative complications⁷. The patient is inactive on account of pain, or on account of narcotics used for the relief of pain. When other recognized factors such as upper respiratory infections, oral sepsis, dietary deficiencies, cardiovascular and pulmonary status, pre-operative medication, anaesthesia, and rough traumatic type of surgery are all guarded

against, there still remains post-operative consideration of pain and inactivity.

Morrison⁸, in 1928, found some relief of pain with resulting improvement in vital capacity by the use of novocaine in hypodermoclysis given below the pectoral muscles in the anterior axillary line. Capelle⁹ was able to minimize spasm by the use of a continuous injection of local anaesthetic into the wound and to restore practically normal abdominal and thoracic excursion as well as vital capacity.

No one has used the long-acting anaesthetics for such a procedure. Hence in 1938, at New York Post-Graduate Hospital, twenty-five cases of abdominal surgery were infiltrated with eucupin procaine solution into the wound, and the results were noted. Since that time, fifty private cases were followed at the Community Hospital, Beloit, Kansas. Vital capacity was checked pre-operatively. At the time of operation, an attempt was made to block off the nerves to the wound by infiltration—most of the solution being placed below the anterior fascia lateral to the incision. From twenty to 100 c.c. of the solution were used. Following operation, vital capacities were checked daily and the narcotic requirement noted.

In studying these cases, one notes freedom from most of the pain, and a general well-being that is so often absent in the controls. Vital capacities were improved from fifteen to forty per cent as compared with non-infiltrated cases. These latter cases showed a vital capacity curve similar to that of Churchill, while the infiltrated cases showed a curve as follows:



Graph showing increased vital capacity in abdominal surgical cases infiltrated with eucupin-procain solution.

The decreased vital capacity on the fourth day is considered due to the loss of anaesthetic action of

the eucupin. It is at this time most patients note some pain.

In this series of fifty private cases, there were no pulmonary complications. The ordinary types of abdominal surgery were performed on this group. The operations included appendectomies, herniotomies, cholecystectomies, gastroenterostomies, hysterectomies, salpingectomies, a cholecystgastrostomy, and a gastric resection. One death occurred on the seventh day following a gastroenterostomy for inoperable carcinoma of the pylorus. The patient was mentally unbalanced and in spite of two special nurses and many narcotics was out of bed many times. He died a few hours after a complete disruption of the abdominal wound.

The amount of narcotics required is interesting. Upper abdominal cases needed one-sixth to one-half grains of morphine and three to five grains of codeine for the entire post-operative convalescence, while lower abdominal cases usually received only two to five grains of codeine. The control cases required three to five times as much morphine and about the same amount of codeine.

Wound healing was very satisfactory. Infected wounds only occurred in ruptured appendix cases, and these healed better than expected. Several cases had serum accumulation below skin; however, since smaller sutures are now being used, this has not reoccurred.

On the first post-operative day, one case developed urticaria which cleared with two small doses of adrenalin chloride.

Short summaries of two cases will illustrate the usual results:

Case 1. A thirty-three-year-old woman with a fixed fourth degree retroversion of the uterus and chronic endocervicitis entered the Community Hospital, Beloit, August 6, 1939. The following morning, under general anaesthesia, the cervix was cauterized; then a Baldy-Webster type uterine suspension and an appendectomy were done through a lower mid-line incision. The abdomen was closed in layers and thirty c.c. of eucupin procaine solution was infiltrated below the anterior fascia. Four grains of codeine sulphate were required for pain and restlessness during the convalescence. Vital capacity dropped thirty-five per cent the first day, and improved daily until the pre-operative level was reached on the sixth post-operative day.

Case 2. A forty-nine-year-old man entered the Community Hospital January 22, 1939, with a diagnosis of chronic recurrent appendicitis. The next morning, under general anaesthesia, the appendix was removed through a McBurney type incision. The incision was infiltrated in layers with thirty c.c. of eucupin procaine solution and the usual closure done. The patient's convalescence was uneventful. He received no narcotics or analgesias post-operatively.

Summarizing the study, it is definite that the use of eucupin procaine solution in abdominal sur-

gery smooths the post-operative course. There is less pain. Fewer narcotics are required. Vital capacities are improved. Hence, post-operative complications such as pneumonia, atelectasis, and embolism have not occurred. It must be remembered, however, that the hardy rural population here may be a factor in these results. It is sincerely hoped that this report will stimulate further work on the subject.

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GAUZE SPONGE IN ABDOMEN TWENTY-SEVEN YEARS*

Maurice A. Walker, M.D.

Clay E. Coburn, M.D.

Kansas City, Kansas

A white woman, aged fifty-five, came to us for examination on January 2, 1940, because she had noticed gradual enlargement of her abdomen for several years. Menstruation had ceased in 1937. Both tubes and the right ovary had been removed in 1913; a stormy convalescence ensued but drainage from her wound had not persisted.

At operation on January 5, a pseudomucinous cystadenoma of the left ovary was found, extending above the level of the umbilicus. In separating dense fibrous adhesions between the tumor, the sigmoid, and the omentum, a pocket five centimeters in diameter was opened. This contained a gauze sponge lying in a mass of orange clay-like material, evidently an old hematoma. The fibers of gauze were fragile but the mesh could be identified beyond question. The tumor was removed. Convalescence was satisfactory, after several days of distention. When examined on June 15, the wound was healed and no masses could be felt in the abdomen.

*From the Department of Surgery, University of Kansas School of Medicine.

President's Page

To the Members of The Kansas Medical Society:

As a profession we cannot remain at a standstill. Despite the unrest of today and the uncertainty of tomorrow, we must recognize the importance of moving forward. To meet the medical economic issues arising today to the best of our ability is to move forward. There are communities in Kansas wherein medical service is not immediately available. The responsibility of providing such service rests upon the members of our profession living adjacent to such communities—adequate service on a rotating basis can be satisfactorily arranged and it constitutes an issue which is in reality a moral obligation. Adequate medical services for our civilian population during the period of our military preparedness emergency must be maintained.

County medical societies should introspect and take an inventory of assets and liabilities. Know your problems. Be prepared to meet emergency community needs. The period of national emergency will be a long one. The time to plan is now. To do so, is to move forward.

Sincerely,

A handwritten signature in cursive script that reads "Loren Loveland M.D.".

President, The Kansas Medical Society.

EDITORIAL

A CHALLENGE TO THE KANSAS PHYSICIAN

It has been truthfully stated that with proper utilization of present knowledge concerning cancer, the mortality therefrom can be reduced thirty to fifty per cent. Kansas has already shown a fifty per cent reduction in mortality from cancer of the skin and a substantial reduction in mortality from cancer of the buccal cavity. "Proper utilization of present knowledge concerning cancer" is being attained in Kansas through the education of the public and through post-graduate instruction of the physician concerning modern methods in diagnosis and treatment.

The Women's Field Army of the American Society for the Control of Cancer has sponsored many programs for the general public in the past few years. The public has been taught and is being taught the early signs or danger signals which may mean cancer. They are being told of the importance of the yearly physical examination which should always include a rectal examination and that the woman who has borne children or is past thirty-five should have an examination of the pelvis and of the breasts every six months. The public has been told to consult the family physician and to avoid the quack. More patients are coming to physician's offices expecting complete physical examinations at routine intervals and the cancer patient is presenting himself much earlier in the course of the disease than in years past.

This challenge should be met by the physician in at least two ways. First, he should do all within his power to further the education of the public, through cooperation in the educational programs and in giving support and encouragement to the workers in the Women's Field Army in their enlistment campaign each April. Second, each physician should make an effort to keep abreast of the times in im-

proving his knowledge of proper diagnostic and therapeutic measures in cancer.

This month the Society Committee on the Control of Cancer and the Kansas State Board of Health are sponsoring a program of post-graduate education in cancer. A man pre-eminent in the field of Cancer, Dr. George T. Pack of Memorial Hospital, New York City, presented programs in six locations throughout the state. Every Kansas physician should have made an effort to attend one of these courses. The programs were both interesting and instructive and should tend to better equip the physician to meet the challenge of the cancer problem.

BANTING'S MEMORIAL

While war is tearing at the heart of many nations and mass death is accepted as the inevitable concomitant of the vast struggle, the medical world is shocked by the news of the death of Doctor Frederick G. Banting. Banting's death strikes home to the hearts of physicians and medical scientists everywhere. He whose energy and creative spirit contributed so richly to the extension of human life in all lands has fallen a victim to the most destructive social force known to man. War, the product of the evil which infests human society, has destroyed a life which represents the best in modern constructive science. The researches of Banting and his co-workers, and the application of their discovery are of epic significance. Their accomplishment was revolutionary in effect when applied to the treatment of diabetes. Such work points the direction in human progress.

War and humanitarian science cannot occupy the fore at the same time. The destructive phase through which the world is now passing, is dominated by power against power. Science must wait until these forces are exhausted by their own methods. Meanwhile let Banting's monument be wrought as a hero of peace, a man of good will; a symbol for all mankind waiting on discovery and the application of scientific technique to human needs.

CANCER CONTROL

TUMORS OF LYMPH NODES

C. Alexander Hellwig, M.D.

Wichita, Kansas

There are no reliable data available on the frequency of primary tumors of lymph nodes. The United States Census of 1934 reports 1,512 deaths from pseudoleukemia and Hodgkin's disease and 3,403 from leukemia, while the majority of fatal tumors of lymph nodes are classed under cancer of lymph nodes. If all forms of primary tumors of lymph nodes are combined, the total incidence of these diseases becomes formidable.

Our knowledge of lymphosarcoma is today as fragmentary as fifty years ago when Paltauf described lymphosarcoma as a relatively common disease, nearly always fatal, difficult to diagnose and little influenced by treatment. Modern contributions are the distinction between lymphocytic and reticulum cell type of lymphocarcinoma, the former having a better prognosis, and the introduction of radiotherapy which is regarded as treatment of choice in all malignant tumors of lymph nodes.

Enlargement of lymph nodes may be due to a great variety of causes. It may be due to infection, to carcinoma cells which have been arrested in the lymph nodes; it may be a manifestation of a blood disease as leukemia, or it may be due to a general lymphoid hyperplasia (status lymphaticus). Often the cause remains obscure in spite of all diagnostic efforts.

When an enlarged lymph node is found, the most common causes should be considered first, namely simple inflammation, granulomatous inflammation (syphilis, tuberculosis), Hodgkin's disease and malignancy. The predilection of certain diseases for particular regions is often helpful in the diagnosis. During the second stage of syphilis, the cervical glands along the posterior border of the sternomastoid muscle and the epitrochlear gland are often affected. The superficial inguinal glands become infected in venereal disease. The submaxillary, bronchial and mesenteric glands are very frequently tuberculous. The supraclavicular glands are involved in breast cancer, those on the left side of the neck may be the first evidence of cancer of the stomach, the prostate or hypernephroma. The physician should

attempt to make a diagnosis by clinical examination, by blood counts, serological and bacteriological tests. Without knowing all clinical and laboratory data, the pathologist is often unable to make a correct diagnosis from biopsy specimens. The microscopic picture while definite in metastatic tumors, is sometimes misleading in primary tumors of the lymph nodes and especially in inflammatory lesions. A lymph node may show the same characteristics in syphilis, tuberculosis, lymphogranuloma inguinale and tularemia. A leukemic gland may look exactly like a lymphosarcoma or like an innocent hyperplasia. Hodgkin's disease may resemble hyperplastic tuberculosis under the microscope. Therefore, the physician should accept with reserve a histologic diagnosis of a lymph node tumor, if it does not conform with his clinical and laboratory findings.

The response of a lymph node tumor to radiation is sometimes a valuable diagnostic aid. When, after radiation, an enlarged lymph node regresses immediately, it generally means lymphosarcoma; a belated response occurs with Hodgkin's disease, while the tuberculosis nodes usually become larger.

The treatment of lymphosarcoma is, despite some encouraging results with radiotherapy, a gloomy chapter. Most of the patients die despite all efforts. Among 310 patients with primary malignant tumors of the lymphatic system, Nathanson and Welch found that twenty-five per cent were dead in fourteen months, fifty per cent in two years and seventy-five per cent in less than five years. Five years after onset, ninety-four per cent were dead. Cutler believes that lymphosarcoma limited to its original site with only regional metastases is frequently curable. The Radium Institute of Paris reports 34.8 per cent cures of lymphosarcoma of the pharynx.

The customary statement that Hodgkin's disease is always fatal must be modified. Although it is true that three-fourth of the cases die within three years, there are cases recorded which lived longer than fifteen years. Jackson observed two cases, both proved by biopsy, that are still in good health, one after sixteen years, the other after twenty-six years.

There is no doubt that x-ray treatment has extended the average duration of life, not only in Hodgkin's disease, but also in other malignant tumors of the lymph nodes.

Leonardo da Vinci was the originator of anatomic illustration. After him, came a whole host of anatomists—Scarpa, the Bells, Sustachius, Camper, Soemmering, et al—who were sufficiently gifted with that artistic touch—to illustrate their own volumes with their own hands. This art of illustration seems to have been completely lost in modern times.—Bulletin, The Toledo Academy of Medicine.

TUMORS OF LYMPH NODES—C. A. Hellwig, M.D.

Type of Tumor	Etiology	Age	Site of Predilection	Symptoms	Laboratory Findings	Biopsy	Radiosensitivity	Treatment	Prognosis
A. INFLAMMATORY									
1. Simple Lymphadenitis	Bacteria (Mostly staphylococcus and streptococcus)	All Ages	Regional to primary lesion. 90 per cent in neck (following infection of teeth, tonsils)	Swelling with more or less pain. Fever in acute lymphadenitis.	Leucocytosis.	Not indicated.	None	If pus formed, surgical incision. Search for primary lesion.	Excellent
2. Granulomatous Lymphadenitis									
a) Tuberculosis	Tubercle Bac.	2nd 3rd decade	Cervical, bronchial, mesenteric	Swelling with or without pain	Positive tuberculin test.	Definite microscopic structure in most cases. Tubercle bac. may be found in sections	No immediate response.	General treatment, x-ray treatment of enlarged glands.	Good
b) Syphilis	Treponema pall.	Adults	In primary stage: regional to initial lesion. In secondary stage: Cervical and epitrochlear lymph nodes	Painless, hard swelling	Darkfield examination of aspirated fluid. Wassermann	Not indicated. Structure not definite enough to make a diagnosis.	None	Specific treatment.	Good
c) Tularemia	Bac. tularensis	All Ages	Regional (neck in oculo-glandular form, axilla in infection of hand)	Swelling, pain.	Agglutination test on serum.	Suggestive.	None	If pus formed, surgical incision.	Good
d) Lymphogranuloma inguinale	Virus	Adult	Mostly inguinal glands	Swelling with and without pain	Frei Test (Skin)	Suggestive.	None	Tartar- emetic intravenously.	Fair (unfavorable after rectum involved)
3. Infectious Mononucleosis	Virus	Young	Neck, axilla, groin	Soft swollen glands	Heterophilic Antibody test on serum. Blood smear: lymphocytosis and mononucleosis.	Not definite.	None	Medical	Excellent.
4. Hodgkin's Disease	Virus (?)	3rd & 4th decade	Neck, inguinal, mesenteric	Firm, painless	Not conclusive. Secondary Anemia.	Definite, except in earliest stage.	Moderate	X-ray treatment.	3/4 of cases dead within 3 years.
B. NEOPLASTIC									
1. Primary Lymphosarcoma	Unknown	All Ages	Cervical, mesenteric, mediastinal. (Thymus)	Swelling of lymph nodes, first painless, later radiating pain. Often fever.	In early stages no blood changes. Later anemia and often leucocytosis.	Often conclusive.	Marked	X-ray treatment.	Very few cures.
a) lymphocytic type									
b) reticulum cell type	Unknown	All Ages	Cervical, mesenteric, mediastinal	Same	Same	Mostly conclusive.	Less radiosensitive	X-ray treatment.	Progressively fatal.
2. Secondary	Unknown	After 40 yrs.	Sometimes first evidence of malignant tumor	Hard, painless swelling	Depends on primary tumor.	Conclusive.	Depends of type of tumor	Surgical removal. X-ray treatment.	Poor

TUMORS OF LYMPH NODES—C. A. Hellwig, M.D.— (Continued)

Type of Tumor	Etiology	Age	Site of Predilection	Symptoms	Laboratory Findings	Biopsy	Radiosensitivity	Treatment	Prognosis
C. SYSTEMIC DISEASES 1. Status lymphaticus	Unknown	Young	General hyperplasia of lymphoid tissue	Painless swelling of lymph nodes	None	Not indicated.	Sensitive	X-ray treatment of lymph nodes recommended by some physicians.	Occasionally sudden unexpected death (anesthesia)
2. Lymphatic Leukemia a) acute	Unknown	1st 2nd decade	General hyperplasia of lymphoid tissue	Painless swelling of lymph nodes Pallor, fatigue, dyspnea, hemorrhages	High WBC. Secondary anemia. Blood smear: High number of immature lymphoblasts. In aleukemia normal or subnormal WBC.	May be difficult to differentiate from lymphosarcoma or simple hyperplasia.	Sensitive	X-ray treatment.	Fatal within six months.
b) chronic	Unknown	Adults	General hyperplasia of lymphoid tissue	Chains of hard discrete lymph nodes	High leucocyte count. Blood smear: 90 and more per cent small lymphocytes. In some cases many immature forms.	Diffuse hyperplasia of lymph nodes. Biopsy of bone marrow helpful in aleukemic stage.	Sensitive	X-ray treatment.	Fatal within six years. (Cases of 15 years duration known)

MEDICAL ECONOMICS

HOW DO YOU COLLECT?

Thelma Ray Osborne

Wichita, Kansas

This article is written for the benefit of the physician who wishes to increase his income and wishes to do so without jeopardizing the friendship and regard of his patients. The physician who has no need of such an increase—who is not interested in improving his financial status—will not care to read further.

Considerable experience in collecting accounts of professional men, both as secretary and collector, has given me an opportunity to observe many factors contributing to the physicians' credit problems, to develop an understanding of those problems and to study ways in which they can be met. That the physician has problems peculiar to the medical profession, that he has a sincere desire to avoid collection methods which may reflect on the dignity and standing of his profession, there can be no doubt. Yet a great deal can be done to solve his credit problems. The doctor should be paid for his services, granted that he will and should do a great deal of charity work. Charity work, however, should be done as such, those who can afford to pay should do so. It is possible to collect yet retain all the dignity and respect due the profession. I hope I am not presumptuous in reviewing a few ways in which I think this can be done.

Very frequently inefficient systems of keeping records bog down the collection machinery. How often the collector receives lists of accounts from physicians on which perhaps a third of the names and addresses are incorrect, information regarding the debtor is lacking and it is next to impossible to locate the responsible party.

First, therefore, I would advise the physician to keep accurate records! Have a secretary with enough intelligence to take the patient's name and address accurately. Take a history yourself—a complete history—you will be surprised to find how often the information will be helpful in effecting collection, or locating "skips." See that your secretary is well trained in receiving patients, in handling them courteously, getting complete information regarding name, address and occupation in a manner inoffensive to the patient. Keep accurate

records of the dates of calls, and treatment rendered. Such information may prove very valuable later.

Second: Talk over the cost of your services with your patient, agree on the charge, and if possible, upon monthly or weekly payments, or some definite time for payment of the account. He will find it much easier to take care of his obligation this way, and will appreciate your business-like methods. The obstetrician, for instance, who makes a practice of arranging for regular monthly payments during pregnancy so that payment of the fee is completed by time of confinement, is rendering a kindly service to the patient as well as to himself. The urologist who arranges for the patient suffering from venereal disease to pay during treatment, avoids the difficulty frequently encountered in collecting after a cure is effected.

In the collection office it is very often difficult to collect amounts due the anaesthetist. We find this due to the fact that the patient is not made to understand an extra charge is to be made for the anaesthetic—that it is not to be included in the hospital bill or the physician's fee. Such charges should be explained in advance if it is at all possible. The same is true with charges made for consultations. While all reputable physicians obtain the consent of the patient or the family before calling in another doctor, it seems very often the patient does not understand that a separate charge is to be made by the consultant. When he receives the bill for this service, he often refuses to pay on the ground that he "did not hire that other doctor."

While these may seem to be minor considerations, attention to such matters will greatly relieve the doctor of annoyances regarding collections, and will increase his income materially. A large per cent of patients are essentially honest and will pay if they are properly handled.

One physician will not allow his secretary to speak to any of the patients regarding their accounts, nor does he do so himself for he refuses to allow that "atmosphere" to enter his office. Yet I know this physician is often hard pressed financially, and is notoriously lacking in business ability.

It may not always be possible to make definite arrangements with the patient regarding cost and payment, as in the case of emergency treatment. However, it is not from emergency patients that we most often encounter complaints. More often it is from patients who have had x-ray, radium, or various other types of treatments over a period of time, all administered with no idea on the part of the patient as to cost.

Let your patient know what his treatment is going

to cost and convince him courteously that you expect to be paid for your work.

Third: Send statements to your patients each month! No doubt physicians do this, but it is surprising how many of them do not, for fear it will offend the patient. If you have this fear, have your statement blanks made up with this sentence printed at the bottom, "Statements rendered monthly." This simple explanation will do away with resentment, for no one objects to receiving regular monthly statements if it is in accordance with the usual routine. You will find that patients actually prefer having their statements each month. They know where they stand, and have an opportunity to plan their finances to allow for payment of the account. If you doubt that it will work, try it, and find out for yourself.

Do you object to having your department store send you a statement each month? Would you prefer that they let your bill pile up over a period of time, then send you a statement for the accumulated balance?

Of course I am familiar with the argument that the medical office is different from the retail firm—that it has problems which confront only the medical profession. In a measure this is very true, and no one has more respect and admiration for the profession, more sympathy with this point of view than the writer. Yet methods of keeping accurate records, definite credit arrangements with debtors, billing them regularly, can be used by the physician, as well as by the merchant.

Fourth: Use a thorough collection procedure. If difficulty is encountered in effecting collection of the balance due after treatment is completed, use an effective, thorough system in effecting settlement. It is useless to simply send statements month after month, a useless waste of statement blanks and postage. If the debtor does not respond to the first statement or two, write him courteously, urging him to get in touch with you and make some definite arrangements for settlement. Have your secretary call him, if necessary, and make every effort to get him to co-operate. Leave no doubt in his mind that it is your desire to work out a plan of payment which he can meet. If he persistently ignores all efforts, notify him that you will be forced to place the account with your collector if he does not get in touch with you by a certain date. If he fails to respond, you have given him every chance, and his neglect should be a signal for immediate follow-up. Place the account with your collector then—and promptly! The collectibility of the account decreases very rapidly. The time to collect is at the earliest possible moment!

Great care should be taken in choosing a collector. Choose an established firm—one whose representatives are courteous, efficient persons of high type. Such a firm will investigate thoroughly the debtor's ability to pay, and will act accordingly. The debtor who has no means will not be unnecessarily harassed. The collector will at all times be courteous, although persistent and firm with those who can and should pay.

Having placed the account with your collector, do not expect miracles. The debtor may be unemployed, he may work on a commission basis, have no attachable assets. If so, and he refuses to pay, he may be "collection proof" and little can be done. You will find, however, that from twenty to forty per cent of your past due accounts can be recovered, which will mean a nice addition to your income.

Remember that a firm attitude regarding collection of an account honestly due you need not in any way injure your practice. It is no kindness to the debtor to allow him to ignore his obligations. He will be a better, more self-respecting citizen if he pays what he owes. Often he will come back to you for treatment after he has paid. If he is the typical "dead beat," it is just as well for you if he does not return.

If you find it too difficult to manage these credit matters yourself, hire a secretary capable of doing it for you, then seen that she does it. You will find it a simple matter to refer the patient to her before he leaves the office. If she is tactful and clever, she should be able to obtain necessary information, and in most cases definite arrangements regarding a payment plan. The results she will obtain will much more than pay her the good salary she will deserve if she is capable.

Handle your collections efficiently and intelligently. You will not only gain financially, but you will also gain the respect of the people of your community, who will look upon you not only as a competent physician, but as a capable, intelligent manager of your own business affairs.

How do you collect?

First comes the general practitioner. Nine times out of ten, he is the man you want. We are told that he is losing ground, that he was all right for the horse and buggy days, but that now everybody ought to have a specialist. Now I can speak on this subject with some right to be believed, for I am a specialist myself. But I take off my hat to the good general practitioner. Upon him, I truly believe, depends the health of the race.—Terry M. Townsend, M.D., President New York State Medical Society. Reprinted from the New York Sun, April 22, 1940.

MEDICAL SCHOOL

POST-GRADUATE CLINICS

The Tenth Annual Post Graduate Clinics of the School of Medicine are arranged this year to provide a four-day program with sessions running almost continuously from 9:00 in the morning until 5:00 in the afternoon. This program is arranged to comply with the various requests and suggestions received during the past year from doctors of the state and to provide the widest possible selection of subjects for those attending all four days. This year emphasis is being placed on diagnostic and therapeutic procedures. The medical school faculty and program committee have endeavored to select the instructors on the basis of their special interest and their ability to present these subjects interestingly and thoroughly.

Each doctor enrolling may select any of the clinics which he wishes to attend at each period throughout the four days, providing that his registration is mailed promptly. The size of the group enrolled in several of the diagnostic and therapeutic clinics is necessarily limited, and preference will be given in the order in which registrations are received. There is no registration or enrollment fee.

PROGRAM

MONDAY, APRIL 7, 1941

9 TO 10 A.M.

- J. E. Welker, M.D.—The treatment of edema.
H. L. Gainey, M.D.—The treatment of leukorrhea.

10 TO 12 A.M.

- R. H. Majors, M.D.—Medical ward rounds; case presentation and discussion. (First hour).
T. G. Orr, M.D.—Surgical ward rounds; case presentation and discussion. (Second hour).
Robert Irland, M.D.—Gynecological ward rounds; case presentation and discussion. (First hour).
C. J. Mullen, M.D.—Common diseases of the eye. (Second hour).
E. O. Parsons, M.D.—Minor surgery clinic: local anesthesia; biopsy; circumcision; sebaceous cyst; ingrown toenails, etc.

- F. I. Wilson, M.D.—Rectal surgery clinic: hemorrhoids, rectal tags, fissures and abscesses.

12 TO 1 P.M.

- T. G. Orr, M.D.—Surgical Diagnosis Clinic.

1 P.M.

Luncheon at the hospital.

2 TO 4 P.M.

- O. W. Davidson, M.D.—Urology clinic and ward rounds. (First hour).

Graham Asher, M.D.—Clinical factors that influence digitalis therapy. (Second hour).

O. S. Gilliland, M.D.—Nose and throat clinic. (First hour).

Sherwin Mella, M.D.—Dermatology Clinic. Diagnosis and treatment of common skin diseases. (Second hour).

H. R. Wahl, M.D., and M. S. Harless, M.D.—Surgical pathology of the gall bladder.

M. H. Delp, M.D.—Special treatment clinic. Intravenous and Intramuscular Therapy.
4 TO 5 P.M.

Logan Clendenning, M.D.—General Medicine Clinic.
5 P.M.

Tour of the hospital.

TUESDAY, APRIL 8, 1941

9 TO 10 A.M.

E. H. Hashinger, M.D.—The use and abuse of estrogenic drugs.

10 TO 12 A.M.

H. M. Roberts, M.D. and L. E. Wood, M.D.—Pneumothorax demonstrations. (First hour).

E. E. Pickens, M.D.—Common diseases of the eye. (Second hour).

C. E. Virden, M.D.—X-ray study of the gastrointestinal tract. (First hour).

D. C. Peete, M.D.—Peripheral vascular diseases. Case presentation and lantern slides. (Second hour).

E. W. Wilhelmy, M.D.—Gastro-intestinal clinic. Case presentation with discussion of the differential diagnosis and treatment.

C. B. Francisco, M.D.—Orthopedic surgery clinic.

T. G. Orr, M.D.—Rectal surgery clinic: hemorrhoids, rectal tags, fissures, abscesses, etc.

12 TO 1 P.M.

P. T. Bohan, M.D.—General medical clinic.

1 P.M.

Luncheon at the hospital.

2 TO 4 P.M.

M. J. Rumold, M.D.—Pre and postoperative treatment. (First hour).

J. B. Weaver, M.D.—Poliomyelitis. Special reference to the recent epidemic. (Second hour).

T. B. Hall, M.D.—Dermatology clinic, diagnosis and treatment of common skin diseases. (First hour).

G. M. Tice, M.D.—X-ray study of the heart. (Second hour).

D. N. Medearis, M.D.—Present status of immunization procedures in children.

C. F. Lowry, M.D.—Treatment of arthritis. Presentation of cases.

4 TO 5 P.M.

L. B. Spake, M.D.—The surgical treatment of deafness.

Fred Angle, M.D.—Clinical consideration of low grade fever of undetermined origin.

WEDNESDAY, APRIL 9, 1941

9 TO 10 A.M.

L. A. Calkins, M.D.—Prolonged labor.

10 TO 12 A.M.

L. G. Allen, M.D.—Irradiation therapy of carcinoma of cervix. (First hour).

E. S. Miller, M.D.—Diabetic clinic. (Second hour).

J. G. Hayden, M.D.—Varicose vein Clinic. Injection, bandages, etc.

E. J. Curran, M.D.—Common diseases of the eye.

E. H. Hashinger, M. D., R. C. Fredeen, M.D., and

N. Walker, M.D.—Endocrine clinic. Presentation of cases with discussion of therapy.

12 TO 1

R. H. Major, M.D.—The use of vitamins.

1 P.M.

Luncheon at the hospital.

2 TO 4 P.M.

I. R. Morrison, M.D.—Blood Sedimentation Studies. (First hour).

C. G. Leitch, M.D.—The clinical application of immunological tests. (Second hour).

J. L. Myers, M.D.—Treatment of infections of the middle and external ear.

H. R. Wahl, M.D., and G. A. Walker, M. D.—Pathology of the heart and blood vessels.

J. G. Schnedorf, M.D.—Anoxia and oxygen therapy in medicine. (First hour).

G. V. Herrman, M.D.—Acute and chronic dermatoses in children: subsiding rash, eczema, diaper, etc. (Second hour).

4 TO 5 P.M.

E. T. Gibson, M.D.—Neurology clinic.

N. F. Ockerblad, M.D.—Urology in children.

THURSDAY, APRIL 10, 1941

9 TO 10 A.M.

F. D. Dickson, M.D.—The surgical treatment of arthritis. Slides and movie.

O. R. Withers, M.D.—The management of bronchial asthma.

10 TO 12 A.M.

L. E. Wood, M.D.—The diagnosis and treatment of non-tuberculous pulmonary lesions. (First hour).

S. H. Snider, M.D.—The treatment of bronchiectasis. (Second hour).

L. A. Calkins, M.D.—Gynecological ward rounds. Case presentation and discussion. (First hour).

J. A. Billingsley, M.D.—Common diseases of the eye. (Second hour).

J. M. Singleton, M.D.—Prenatal clinic.

M. H. Delp, M.D., and H. L. Gainey, M.D.—Heart disease in pregnancy.

12 TO 1 P.M.

C. C. Dennie, M.D.—Unusual skin diseases. Lantern slides and case presentation.

F. C. Neff, M.D.—(a) The newborn: emergencies such as cyanosis, pneumothorax, and vitamin K deficiency. (b) Older children: interstitial bronchopneumonia from pertussis.

1 P.M.

Luncheon at the hospital.

2 TO 4 P.M.

B. L. Elliott, M.D.—Neurology clinic. Case presentation.

Ross Newman, M.D.—Female urology clinic.

Symposium: Sulfonamide drugs. Discussions by R. H. Major, M.D., L. A. Calkins, M.D., N. F. Ockerblad, M.D., J. B. Weaver, M.D., and Tom Hamilton, M.D.

TUBERCULOSIS CONTROL

DEFINITION OF REPORTABLE TUBERCULOSIS

F. C. Beelman, M.D.*

Topeka, Kansas

During the past ten years the number of reported cases of tuberculosis, in ratio to the number of reported deaths, has consistently decreased. In 1930, for each tuberculosis death reported, two active cases were reported; in 1935 the ratio was 1.6 cases per death; in 1939 1.2 cases per death. As a minimum standard, we should have reported at least three cases of tuberculosis per each death.

One obstacle in the reporting of tuberculosis has been the lack of a clear understanding of what constitutes reportable tuberculosis. Every child that has a positive tuberculin reaction has had a primary tuberculous infection, therefore is reportable under the present regulations. We know that calcified or healed primary tuberculosis, in which classification ten per cent of our child population is included, is not a public health menace. The original regulations were prepared to control the active case of tuberculosis that was a menace to the health of others. The majority of physicians object to definitely branding a child with a healed primary infection, as a case of tuberculosis. This is proven by the fact that out of approximately 50,000 children tuberculin tested in Kansas during 1940 with several thousand positive reactors, only sixty-five were reported as having primary or childhood tuberculosis.

Information relative to the reporting of tuberculosis was obtained from a number of official sources. The following important facts were deducted from the material:

(1) That juvenile, childhood, hilus or healed primary tuberculosis is not accepted by the Division of Statistics of the National Tuberculosis Association, as constituting a case of tuberculosis.

(2) There is no uniform policy regarding the reporting of tuberculosis. The problem is a general one and is being worked out in various ways by State Health Departments.

(3) There is some difference of opinion on just what should be reported as tuberculosis.

(4) That a definition of reportable tuberculosis acceptable to all concerned could be compiled. A proposed definition, which was submitted for an opinion was approved by the majority.

After the various opinions submitted were studied, the following proposed definition was constructed, which conforms with the "Diagnostic Standards and Classification of Tuberculosis" as proposed by such committee of the National Tuberculosis Association and is in keeping with the majority of opinions expressed.

The following definition was approved by the Committee on Tuberculosis Control of The Kansas Medical Society and passed by the Kansas State Board of Health on February 17, 1941.

DEFINITION OF TUBERCULOSIS

In order to facilitate the reporting of tuberculosis in the State of Kansas, it is recommended by the Committee on Tuberculosis Control of the Kansas State Medical Society that the following definition and limitation be applied, as an explanation of the term tuberculosis as used in the Laws, Rules and Regulations Relating to Public Health in Kansas.

In the light of present day conceptions of tuberculosis it seems desirable to take into consideration two apparent phases of the disease (1) Primary Tuberculosis and (2) Reinfection Tuberculosis. Both phases have an important bearing upon the prognosis, treatment and public health aspect of tuberculosis. It is understood that these are stages of the same disease and are indistinguishable in some instances.

That the Diagnostic Standards as recommended by the National Tuberculosis Association be accepted for (1) Primary Tuberculosis and (2) Re-infection Tuberculosis. That primary tuberculosis when indicated only by a positive tuberculin reaction or calcified, fibrotic lesions (healed or in regression) as found on x-ray examination be considered not reportable. That primary tuberculosis when known to be progressive and in an active phase that may become a menace to others be reportable. Furthermore, that the stage understood as Re-infection Tuberculosis as outlined be considered the reportable disease mentioned in detail in the Laws, Rules and Regulations Relating to Public Health.

* Director Division of Tuberculosis, Kansas State Board of Health.

NEWS NOTES

LEGISLATURE

House Bill No. 1, the original osteopathic proposal introduced by Representative D. B. Fordyce of Labette, was killed in the House Committee on Hygiene and Public Health on March 17. In addition to their activities on that bill the osteopaths have also attempted to further the progress of House Bill No. 286 which is identical to House Bill No. 1 except for the preamble presented below and which was introduced by the House Committee on Soldiers Compensation as a committee bill. The Committee on Soldiers Compensation, which is composed of seven members, apparently had several members who are in sympathy with the arguments made by the osteopaths and thereby felt that action on the osteopath bill could be expedited by their committee approving and issuing a bill identical to the one being considered at that time by the House Committee on Hygiene and Public Health. Since committee bills proceed directly to the calendar without additional action other than that taken by the committee House Bill No. 286 is presently pending on the list of bills eligible for consideration. An interesting aspect of House Bill No. 286 is the fact that apparently Representatives Van Horn of Archison, Mahew of Edwards and Christian of Grant, were the only members of the committee present at the time the bill was voted out and that Representatives Daniels, Perkins, Woofter and McManus, the other members of the committee were not present. If this is correct it is clear that a quarum of the committee did not participate in the vote and that therefore considerable doubt exists as to whether House Bill No. 286 is actually a legal bill.

The preamble added to the above bill is as follows:

"Whereas, One of the greatest needs of the ex-soldier, as well as the general public, is proper medical attention, and the present defense program has called many doctors from their fields of practice in this state and will call many more, which condition may well leave communities without sufficient doctors to care for the sick and disabled citizens if any qualified group of physicians are prohibited from practicing the healing art by lack of legislative relief; and

Whereas, Physicians of the osteopathic profession have practiced the healing art since 1913, without complaint on the part of the public, under the impression that they had the right to use any healing agency as taught in osteopathic colleges, which would assist in the recovery of their patients, but their practice rights have now been restricted by a recent interpretation of the Osteopathic Practice Act to such an extent that it is impossible for them to continue their practice unless proper legislative relief is granted, and because of the existing condition, thirty-six osteopathic physicians have left this state since the last legislative session, to practice in states which have examined their qualifications and granted them unlimited privileges; and

Whereas, Many communities in this state have no resident doctors other than osteopathic physicians and many communities have hospitals constructed and successfully operated by osteopathic physicians whose services will be lost to the citizens of the state of Kansas unless legislative relief is granted extending to osteo-

pathic physicians the right to use such healing agencies as are necessary in the proper treatment of their patients as taught and practiced in their colleges; Now, therefore, Be it enacted by the Legislature of Kansas"

Since the House Calendar Committee has not as yet advanced House Bill No. 286 for consideration, the osteopaths have taken several recent actions in an effort to require that committee to approve the measure for immediate consideration. To date these activities have failed.

No osteopathic bill has as yet been introduced in the Senate.

Other bills of interest which have been introduced since the report contained in the last Journal and actions taken on certain of these and other bills are as follows:

House Bill No. 201. An Act regulating the sale of narcotics. (This bill was killed by the House Committee on Hygiene and Public Health.)

Senate Bill No. 214 and House Bill No. 319. An Act introduced by the Kansas State Hospital Association and authorizing the operation of group hospital insurance plans by hospitals. (This bill has been passed by the Senate and is now pending in the House.)

Senate Resolution No. 21. A resolution directing the legislative council to make a study of conditions in Cherokee and neighboring counties, relating to the prevalence and seriousness of cases of tuberculosis and silicosis for the purpose of assisting in the determination of the necessity of a state hospital or sanatorium in such locality.

House Bill No. 343. An Act increasing the salaries of certain officials and employees of the Kansas State Board of Health. (This bill has been passed by the House.)

House Bill No. 367 and Senate Bill No. 292. An Act authorizing the construction of a municipal hospital in Seneca.

Senate Bill No. 352. An Act providing for the control and eradication of marijuana.

Senate Bill No. 256. An Act relating to the probate code and including among other things an amendment to the present section pertaining to the priority of claims against estates. (This bill has passed the Senate.)

House Bill No. 197. An Act establishing certain authority of milk inspection in the Kansas State Board of Agriculture. (This bill has passed the House.)

Senate Bill No. 301. An Act introduced by the Kansas State Veterinary Medical Association to establish certain control of meat and milk inspection under a division of veterinary medicine in the Kansas State Board of Health. (This bill was killed in the Senate Committee on Public Health.)

Senate Bill No. 312. An Act providing for the securing of payment of workmen's compensation in certain cases of occupational disease and authorizing the use of medical advisory boards and other medical assistance in that connection.

House Bill No. 265. An Act pertaining to pre-nuptual physical examinations (tests for syphilis, gonorrhea and other conditions are required). Under the wording of the act most of the tests would be performed by the Kansas State Board of Health laboratories. Maximum physicians fees of \$2.50 per examination are provided.

House Bill No. 352. An Act providing that the Kansas State Board of Health shall have the power to designate the minimum standards necessary to maintain health and decency for those in the various categories of relief.

Senate Bill No. 258. An Act providing that no hospital or sanatorium may charge more than ten dollars per day for treatment of mental patients.

House Bill No. 407 and Senate Bill No. 309. An Act

authorizing the construction of a municipal hospital in Herington.

House Bill No. 245. An Act relating to workmen's compensation and making provisions concerning certain medical aspects thereof.

House Bill No. 422. An Act relating to medical, surgical and hospital insurance written by insurance companies.

Senate Bill No. 348. An Act recodifying certain school laws. (This act among other things includes a revision of the present section of the school laws pertaining to school physicians and health supervision of pupils. Certain present inapplicable and impracticable provisions pertaining to the above subjects are made more flexible and workable. Courses of health and hygiene are made mandatory in the public school curriculum.)

House Bill No. 353. An Act enabling Sedgwick County to include a tax levy for the purpose of rebuilding and re-equipping the county hospital in that county.

House Bill No. 421. An Act enabling the city of Beloit to include a tax levy for the maintenance of a hospital in that city.

Senate Bill No. 223. An Act providing for the examination and licensure of naturopaths. (This bill was killed by the Senate Committee on Public Health. It was more or less identical to House Bill No. 8 which was killed by the House Committee on State Affairs.)

House Bill No. 311. An Act providing for the repeal of an old and inapplicable statute pertaining to the control of smallpox.

House Bill No. 295. An Act repealing an old statute wherein intoxicating liquor could be furnished to persons in county jails on doctors' prescriptions.

Senate Bills Nos. 173 and 174. An Act authorizing the city of Leavenworth to levy additional taxes for public health purposes.

House Bill No. 198. An Act enabling certain procedure for sick and disabled persons to vote at home upon a certificate of disability by a physician.

1941 MEETING

The Committee on Publicity for the next annual session, which will be held in Topeka on May 12, 13, 14 and 15 with the Shawnee County Medical Society as hosts, has announced that the following speakers have been secured:

Louis J. Hirschman, M.D., Detroit, Michigan

Sumner L. Koch, M.D., Chicago, Illinois

Albert M. Snell, M.D., Mayo Clinic, Rochester, Minnesota

Roger L. J. Kennedy, M.D., Mayo Clinic, Rochester, Minnesota

Arthur L. Smith, M.D., Lincoln, Nebraska

John A. Toomey, M.D., Cleveland, Ohio

Eugene M. Landis, M.D., Charlottesville, Virginia

George H. Gardner, M.D., Chicago, Illinois

Nathan A. Womack, M.D., St. Louis, Missouri

John R. Nilsson, M.D., Omaha, Nebraska

Bennett Y. Alvis, M.D., St. Louis, Missouri

T. Roy Gittins, M.D., Sioux City, Iowa

J. Emerson Dailey, M.D., Houston, Texas

M. Edward Davis, M.D., Chicago, Illinois

The Committee on Scientific Work of the Society is cooperating with the local program committee by furnishing a number of scientific papers by Kansas physicians. Dr. John Porter of Concordia is the committee chairman in charge.

Special stress is being placed upon the scientific exhibits and it is the aim of the local committee to have some thirty or more. Dr. C. B. Trees is in charge of the scientific exhibits.

In the field of entertainment there will be the golf, skeet, and trapshooting tournaments on Monday, May 12, with a stag dinner to be held that evening.

Dr. Orville R. Clark, chairman of the Program Committee has announced that the House of Delegates meetings will be held on Tuesday evening and Thursday at four o'clock in order that these meetings will not conflict with the scheduled scientific program.

The 1941 session will be the first to use the facilities of the new \$1,500,000 Municipal Auditorium, located between Seventh and Eighth Streets on Quincy. The Shawnee County Medical Society committees in charge of the program and arrangements have been at work for several months laying the groundwork for this session.

Reservations have been received to date from the following firms for technical exhibits:

Gerber Products Company, Fremont, Michigan.

Smith, Kline & French Laboratories, Philadelphia, Pennsylvania.

Riggs Optical Company, Kansas City, Missouri.

The C. V. Mosby Company, St. Louis, Missouri.

M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.

Mid-West Surgical Supply Company, Wichita, Kansas.

Parke, Davis & Company, Detroit, Michigan.

Merck & Company, Inc., Rahway, New Jersey.

J. B. Lippincott Company, Philadelphia, Pennsylvania.

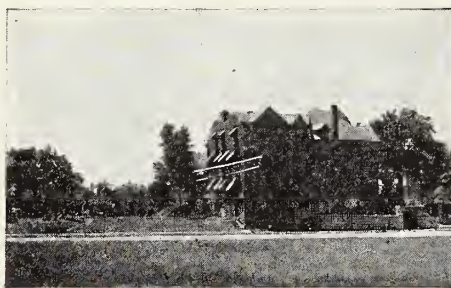
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Fig. 112—Bromide Eruption

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"... a masterpiece of dermatological literature." MAINE MEDICAL ASSOCIATION JOURNAL.

"It is a refreshing novelty to find a textbook in which the authors unhesitatingly recommend a treatment they have found efficacious or condemn methods they have found valueless." TRI-STATE MEDICAL JOURNAL.

"It is to dermatology what the unabridged dictionary is to the English language." NEW YORK STATE JOURNAL OF MEDICINE.

"The volume can be called, without exaggeration, a dermatological encyclopedia." RHODE ISLAND MEDICAL JOURNAL.

"The text is plain, explicit, ample and appropriate. The illustrations are remarkable." MINNESOTA MEDICINE.

"The sections on the disorders of the hair and nails alone make the possession of the book desirable." MEDICAL JOURNAL OF AUSTRALIA.

"This excellent book might easily be referred to as 'An Atlas of Skin Diseases' because of its numerous illustrations." PENNSYLVANIA MEDICAL JOURNAL.

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 Cole Chemical Company, St. Louis, Missouri.

The Kansas Medical Assistants Society, which was organized at the 1940 session in Wichita and has at the present time many local chapters through out the state, will hold its annual session on Sunday and Monday, May 11 and 12, with registration on Sunday at the Hotel Jayhawk. Since the organization is for the benefit of the physician's assistants over the state it is urged that doctors pay the girls registration fee of \$1.00 and their expenses to the meeting, as a bonus or incentive for further effort in his behalf. An instructive and interesting program is scheduled.

ORGANIZATION

The Society Committee on Maternal Welfare has recently completed the organization of the Kansas State Obstetrical and Gynecological Society. Approximately forty men from almost every part of the state met in Wichita on

March 6. The new society is open to membership until the annual meeting, with the attendance at the meeting, however, required. The annual dues will be \$3.00 per year, which included a banquet at the May meeting. Application blanks may be had by writing to Dr. L. R. Pyle at Topeka.

A list of the new members is as follows: Dr. A. C. Armistage of Hutchinson; Dr. L. E. Hughey of Concordia; Dr. Letteer Lewis of McPherson; Dr. H. R. Ross of Topeka; Dr. Porter Brown of Salina; Dr. C. D. Blake of Hays; Dr. F. S. Hawes of Russell; Dr. Ray A. West of Wichita; Dr. B. C. Beal of Clearwater; Dr. Robert Sohlberg of McPherson; Dr. L. A. Calkins of Kansas City; Dr. E. L. Cooper of Wichita; Dr. Paul B. Young of Wichita; Dr. B. P. Meeker of Wichita; Dr. E. J. Nodurft of Wichita; Dr. J. N. McGrew of Wellington; Dr. F. L. DePew of Howard; Dr. M. W. Hall of Wichita; Dr. Clyde Merideth of Emporia; Dr. Ward Cole of Wellington; Dr. Guy E. Finkle of McPherson; Dr. A. S. Hawkey of Newton; Dr. Cyril V. Black of Pratt; Dr. J. W. Shaw of Wichita; Dr. R. W. Maxwell of Wichita; Dr. Spencer Boyd of Topeka; Dr. Howard Clark of Wichita; Dr. L. R. Pyle of Topeka; Dr. Howard Rust of Pittsburg; Dr. Glenn E. Kassebaum of El Dorado; Dr. J. Allen Howell of Wellington; and Dr. E. C. Rainey of Wichita.

Dr. Ray A. West of Wichita was elected President of the new organization, Dr. Porter Brown of Salina as Vice-President, Dr. L. R. Pyle of Topeka as Secretary-Treasurer; Dr. F. M. White of Russell, Dr. Howard Rust of Pittsburg, and Dr. Robert Sohlberg of McPherson, were elected members of the executive committee.

Dr. L. A. Calkins, of Kansas City, professor of obstetrics and gynecology at the University of Kansas School of Medicine and director of the American Committee on Maternal Welfare was the speaker.

Although Kansas now has the lowest maternal mortality rate in the history of the state, one of the purposes of the organization is to bring about an even greater reduction in this rate. As a means suggested to this end is an educational program not only among the profession but through the education of the public. This plan is suggested through

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talks to groups of young people and to prospective mothers and fathers. As an incidence, such a campaign was carried on in the City of Cleveland, Ohio, and the success of this campaign was very satisfactory. The present maternal mortality in Kansas is 3.4 deaths per thousand births which is much below the national average. However, it is believed that this can be materially lessened.

RESIGNATION

Dr. A. C. Armitage, formerly of Kingsley and now practicing in Hutchinson, recently tendered his resignation as a member of the council by reason that his present location is not situated in the district which he represented.

His successor has not as yet been selected.

NEW COUNTY SOCIETIES

Charters have recently been granted to the Chase County Medical Society and to the Morris County Medical Society by the Society Council. Officers of the new societies are as follows: Dr. C. F. Hoover of Staffordville, as President; Dr. J. F. Shelley of Elmdale as Vice-President; Dr. M. W. Woodhull of Cottonwood Falls as Secretary-Treasurer and Dr. J. Hinden of Strong City, Dr. A. E. Titus and Dr. M. W. Woodhull of Cottonwood Falls as Board of Censor of the newly organized Chase County Society. The new officers for the Morris County Medical Society are as follows: Dr. George Brethour of Dwight as President; Dr. T. P. Haslam of Council Grove as Vice-President and Dr. C. C. Kerr of Council Grove as Secretary-Treasurer.

SEDGWICK SPRING CLINIC

The Sedgwick County Medical Society held its fourth Spring Clinical Assembly on Tuesday, March 18, at the Allis Hotel in Wichita. The scientific program was as follows:

- 10:00 a.m.—Lymphopathia Venerum
.....Dr. J. V. Van Cleve, Wichita
- 10:30 a.m.—Pathology of the Thymus
Gland.....Dr. C. A. Hellwig, Wichita
- 11:00 a.m.—X-Ray Therapy in Endocrine
Disturbances.....Dr. A. F. Rossitto, Wichita
- 11:30 a.m.—Carcinoma of the Breast.....
.....Dr. George T. Pack, New York, N. Y.
- 12:30 p.m.—Round Table Luncheon.
- 2:00 p.m.—Pruritis Ani-Medical and
Surgical.....Dr. C. C. Tucker, Wichita
- 2:30 p.m.—Hysterectomy-Clamp
MethodDr. M. W. Hall, Wichita
- 3:00 p.m.—Hydronephrosis-Anomalous
Vessels.....Dr. V. L. Pauley, Wichita
- 3:30 p.m.—Pathological Physiology of the
Liver.....Dr. G. F. Corrigan, Wichita
- 4:00 p.m.—Carcinoma of the Stomach.....
.....Dr. George T. Pack, New York, N. Y.
- 6:30 p.m.—Banquet—
The Fall of France....Dr. Andre Baude, Independence (French Medical Officer)

SALESMAN

The Society recently published a bulletin to all of the county medical societies, relating to the activities of an



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Feb. 1935. Vol. XLV, No. 2, 149-154*

insurance salesman who was calling upon the physicians in the state in the interest of selling them accident and health policies and who was apparently engaged in fraudulent practice.

The person was subsequently apprehended in Wichita and is now awaiting trial in Marion.

MINUTES

A joint meeting of the Council and the Committee on Public Policy was held in Topeka on Sunday, February 9, 1941.

Members present were as follows: Dr. F. L. Loveland, Topeka, President; Dr. M. Trueheart, Sterling; Dr. Herbert Atkins, Pratt; Dr. W. F. Bernstorf, Winfield; Dr. J. L. Lattimore, Topeka; Dr. C. D. Blake, Hays; Dr. O. A. Hennerich, Hays; Dr. L. S. Nelson, Salina; Dr. J. H. A. Peck, St. Francis; Dr. Geo. O. Speirs, Spearville; Dr. E. C. Duncan, Fredonia; Dr. O. W. Davidson, Kansas City; Dr. J. F. Gsell, Wichita; Dr. W. P. Callahan, Wichita; Dr. C. C. Nesselrode, Kansas City; Dr. W. M. Mills, Topeka; Dr. Hugh A. Hope, Hunter; Dr. R. G. Ball, Manhattan; Dr. J. W. Randell, Marysville; Dr. John M. Porter, Concordia; Dr. J. B. Carter, Wilson; and Mr. Clarence Munns.

The Council acted upon the following matters:

Upon a motion made by Dr. Lattimore, seconded and carried, county medical society charters were approved for issuance to the Morris County Medical Society and the Chase County Medical Society.

Upon a motion made by Dr. Nelson, seconded and carried, the following resolution was adopted pertaining to exemption from dues of members serving in the military forces:

On and after January 1, 1941, members of the

Society who are engaged in full-time active duty with the United States Army, Navy or Marine Corps may, upon the request of their county medical society, be exempted from payment of Society dues for the period that they are engaged in such full-time active duty.

Exemption from payment of dues shall be pro-rated upon a monthly basis equal to one-twelfth of the total annual dues assessed by the Society for the period of exemption which commences on the first day of the month following entrance into full-time active service and terminates on the first day of the month following return to a civilian status.

Upon a motion made by Dr. Speirs, seconded and carried, the executive secretary was instructed to write the county medical societies in the Eleventh Councilor District to suggest that they hold a district meeting to discuss the question of filling the Councilor vacancy occasioned by Dr. A. C. Armitage's removal from the district and by his subsequent resignation from the Council; that Dr. Armitage's resignation be accepted as of the time his successor is elected; and that the members of the district be authorized by the Council to fill the vacancy now either permanently or temporarily, or at the time of the next annual session as they prefer.

Dr. W. M. Mills, Chairman of the Editorial Board, presented the financial report pertaining to the Journal. Upon a motion by Dr. Nesselrode, seconded and carried, the report was accepted, and the Council extended to the Editorial Board its appreciation for the excellent, efficient service and assistance that board has rendered.

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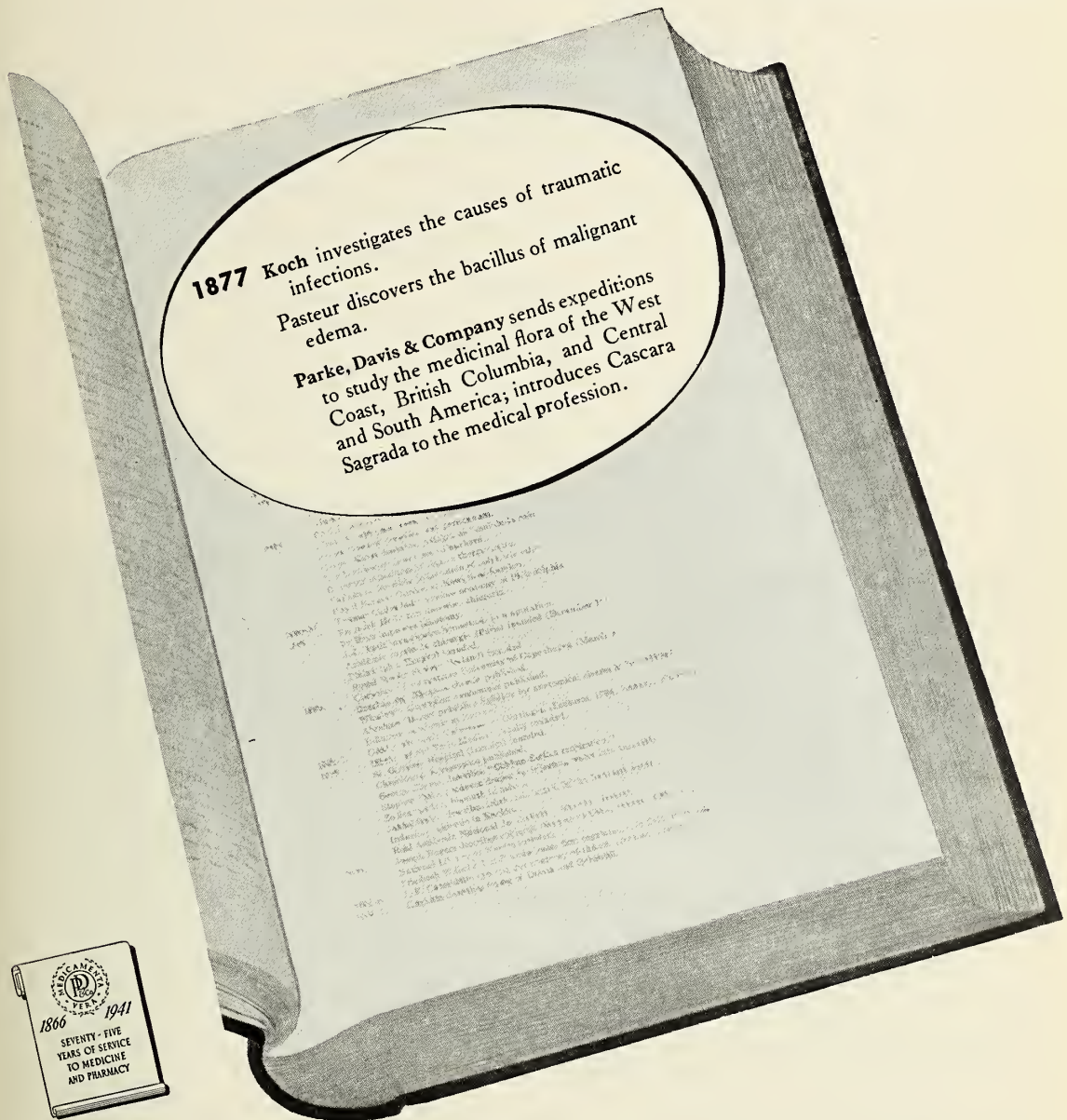
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Dr. Nesselrode discussed the present rules and regulations covering admittance to the medical reserve corps of the United States Army, Navy, and Marines; the need those agencies have and will have for additional enlistment of physicians; and the possible advantages of relaxing present commission requirements to obtain such enlistments. Upon a motion made by Dr. Davidson, seconded and carried, Dr. Nesselrode and Dr. Loveland were asked to communicate this suggestion to Dr. R. W. Fouts of Omaha, Seventh Corps Area representative of the American Medical Association Committee on Medical Preparedness.

Dr. Callahan discussed present rules and regulations pertaining to the appointment of medical personnel for county selective service boards and medical advisory boards and the need to permit rotation and the making of additional appointments thereon in order to permit a practical and efficient disposition of this work. The executive secretary was instructed to make inquiry through the Kansas Selective Service Board as to whether it would be possible to approve requests and recommendations of this kind received from particular counties.

A report was made concerning legislative matters in which the Society is interested and discussion followed on that subject by members of the Council and of the committee.

Dr. Gsell described the recent activities of the National Physicians Committee.

Dr. Lattimore presented a report of the plans for the next annual session. Upon a motion made by Dr. Nelson, seconded and carried, it was agreed that the Society should guarantee financial assistance in a sim-

ilar manner as in past years.
Adjournment followed.

KANSAS MEDICAL ASSISTANTS

The Topeka Physicians' Assistants Society has completed arrangements for the second meeting of the Kansas Medical Assistants Society in Topeka on May 11 and 12. A program including a discussion of collections, practical suggestions in preparing laboratory specimens, helpful hints in managing an office gained through twenty-five years experience, and several other items of interest to doctor's assistants has been arranged.

It has been the custom for the doctor to defray the expenses of his assistant to these meetings inasmuch as they are more or less of a postgraduate course to insure smoother office routine and provide practical information.

On February 19, the members of the Sedgwick County Medical Assistants Society heard Doctor Rene Gouldner present reasons why Kansas should have a law requiring a physical examination before marriage, and Mr. J. F. Austin discuss state legislation pertaining to medicine.

Mr. Robert E. Russell discussed violations of a professional code of ethics before the March meeting of the Topeka Physicians' Assistants Society on March 3.

—Margaret MacKenzie, President.

COUNTY SOCIETIES

The Anderson County Medical Society elected the following officers at a meeting held in Garnett on January 30:

For the Local Treatment of Acute Anterior **URETHRITIS**

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I. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph. Gon. & Ven. Dis.*, 23, 201 (March) 1939.

*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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Dr. H. F. Spencer of Garnett as President; Dr. R. E. White of Garnett as Vice-President; Dr. J. N. Carter of Garnett was re-elected as Secretary-Treasurer.

The Bourbon County Medical Society held a banquet in Fort Scott on February 10. Speakers were Dr. George C. Lee and Dr. Homer Beal both of Kansas City, Missouri.

The Cloud County Medical Society held a dinner meeting at St. Joseph's Hospital in Concordia on February 13. Dr. Allen Olson of Wichita spoke on "Allergy as Applied to General Practice" and Dr. C. A. Hellwig of Wichita discussed the "Pathology of Thyroid Diseases." The following officers were elected for 1941: As President, Dr. C. O. Anderson of Concordia; as Vice-President, Dr. Ross Weaver of Concordia; as Secretary-Treasurer, Dr. C. D. Kosar of Concordia.

The Comanche County Medical Society held a dinner meeting in Coldwater on February 4. The following officers were elected: Dr. Maurice Gage of Coldwater as President; Dr. L. D. Glenn of Protection as Secretary-Treasurer; and Dr. R. A. J. Shelly of Coldwater as Delegate.

The Crawford County Medical Society elected the following officers at a meeting held in Pittsburg on January 30: Dr. H. J. Veatch of Pittsburg as President; Dr. E. C. McDonald of Pittsburg as Vice-President; Dr. Cleo Bell of Pittsburg as Secretary-Treasurer. Speakers at the meeting were: Dr. Irwin Craig of Joplin who spoke on "The Gynecological Aspects of Backache," Dr. Sam Grantham of Joplin who spoke on "The Orthopedic Aspects of Backache" and Dr. Francis Carmichael of Kansas City who spoke on "The Neurosurgical Aspects of Backache."

The Elk County Medical Society held a meeting on February 19 in Howard. The following officers were elected for the year 1941: President, Dr. R. C. Harner of

Howard; Vice-President, Dr. Alvin Y. Wells of Moline; Secretary-Treasurer, Dr. F. L. DePew of Howard; Delegate, Dr. R. C. Harner of Howard.

AUXILIARY

PRESIDENT'S MESSAGE

Our year is drawing to a close and we have much unfinished business. We appreciate your past efforts and want to encourage you as we near the "home stretch." Several auxiliaries are having their Public Relations meetings this month and there are, no doubt, many counties that would like to organize before the year closes so they can be included in the new Year Book. This facilitates

JOHNSON HOSPITAL CHANUTE, KANSAS

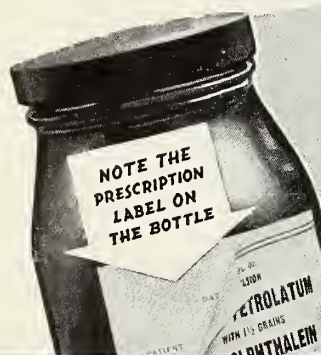
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The Library of the Medical Department of the University of Kansas has every desire to be of service to the medical profession in the state. Any physician who wishes to avail himself of the facilities of the Library will be welcome both in the use of its periodicals, bound volumes of periodicals, and monographs and text-books.

Under certain circumstances, provided the volumes are not being actively used by the students, the Library will send such volumes as are needed to physicians in the state, on request, for a period of one week, provided carriage charges are paid both ways.

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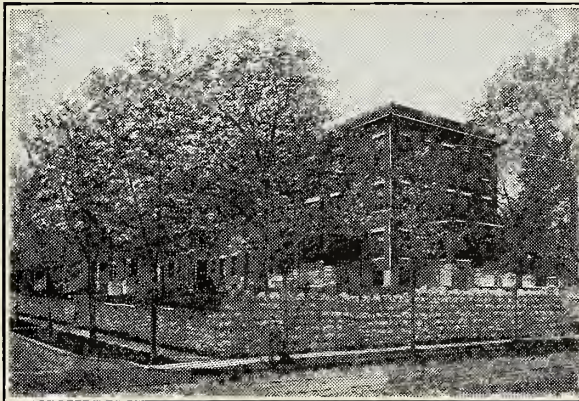
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the work of the state. Our New Year begins immediately after the state convention in Topeka, May 12-15.

As Mrs. L. B. Spake, organizer, Mrs. W. Y. Herrick, president-elect and I visited the northeast section of our state in February, we were impressed with the fine work being done by various auxiliaries. In Salina and Ottawa Counties, where Mrs. Earl Vermillion is president, the auxiliary takes its turn, with other women's organizations, broadcasting Fridays at 4:15 p.m. over KSAL in "The Women's Radio Hour Program." Let's listen in April 4, for their health program.

In Mitchel County at Beloit we found a group lead by Mrs. W. W. Weltner doing some worth while health work and they have secured the necesary number of students and a qualified instructor for a Red Cross First Aid Class and all auxiliary members who are not nurses are attending. This year they have an increase in membership.

In Cloud County with members in Concordia and surrounding towns, with Mrs. E. R. Gelvin as president, we found a fine spirit among the medical wives and this of course is of great value in eliminating influences destructive to the medical profession.

Washington County has just organized with a goodly number and Mrs. Z. H. Snyder, Greenleaf, is their president. They are making some very definite, workable plans

and we expect good reports from this county.

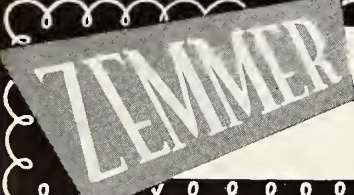
Our greatest surprise was to find Marshall County at Marysville, under the leadership of Mrs. W. R. Breeding, carrying on a real auxiliary program with all committees functioning altho they were only two months old. This promises to be one of the best auxiliaries in Kansas. Let's watch their progress.

In other issues I've also mentioned our auxiliaries in Lyon, Shawnee and Wyandotte Counties, but we still have several counties unorganized in this and other sections. Mrs. L. B. Spake, Kansas City, organizer, is ready to help you any time you call on her.

When this issue reaches you we hope all reports will be in my hands but you may forward any additional information you wish until April 15 when they will go to press.

You may offer eight-month subscriptions to Hygeia for one dollar to new subscribers. No commission is allowed on this offer but this price will help us to introduce it to new subscribers.

Have you studied the questionnaire "Women's Health Interests" sent out by Dr. W. W. Baur from the Health Education department of the American Medical Association? What plans have you made for this project? Ask your Public Relations chairman about it and about the booklet "The Doctor's Wife" by Dr. Rock Sleyster. Per-



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haps each member of your auxiliary will want a copy.

It isn't too late to order the Bulletin of the Woman's Auxiliary to the American Medical Association. The spring issue promises to be very helpful with articles from our founder Mrs. Samuel Clark Red, our organizer, national committee chairmen, and others. Also special articles by prominent physicians we will want to read are included. Let's keep our finger on the pulse of our organization by being a subscriber. Send one dollar to Mrs. H. E. Christianberry, Highland Drive, Knoxville, Tenn.

We are ready and anxious to be of service whenever and wherever needed, so call on us.

Mrs. T. D. Blasdel, President.

NOTICE

Hotel Carter will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association which will be held in Cleveland, June 2-6, 1941. Requests for reservations should be sent immediately to Dr. Edward F. Kieger, Chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

NOTICE

In connection with the Auxiliary activities during the annual meeting of The Kansas Medical Society, May 12-15, the Topeka Auxiliary plans to hold a golf tournament for Auxiliary members on Monday, May 12, at the Shawnee Country Club. If you would care to play in the tournament, please write to Mrs. J. L. Lattimore, 3109 Canterbury Lane, Topeka, chairman of the golf tournament, so that she may know how many players will participate.

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THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

Owned and Published by The Kansas Medical Society

Volume XLII

APRIL, 1941

Number 4

Greetings

We, the members of the Shawnee County Medical Society, individually and as a society wish to extend to you, as Distinguished Visitors or Members of The Kansas Medical Society, a cordial welcome to Topeka and the eighty-second annual session of The Kansas Medical Society.

Since this meeting has for its primary purpose, the education of its members, we have attempted to provide for you a program that is interesting, balanced and up to date. For intervening periods of rest and relaxation there will be the usual golf and trap meets, the stag banquet and the annual banquet and dance.

The Shawnee County Medical Society appreciates the cooperation of the Council in arranging the business sessions of the Society so that they do not coincide with the scientific sessions. We also appreciate the diligent work of the Committee on Scientific Work and those members who have so willingly consented to prepare papers, scientific exhibits or to serve in other capacities during this meeting.

It is with both pride and regret that we announce that two of our members who have worked so hard to make this meeting a success as well as many other members throughout the state who would have appreciated this meeting the most have been called to the service of Our Country.

Let us all get together in Topeka and make this the finest and largest Annual Meeting of The Kansas Medical Society to date.

LUCIEN R. PYLE, M.D.,
President, Shawnee County Medical Society.

Guest Speakers



BENNETT Y. ALVIS, M.D.,

St. Louis, Missouri

Assistant Professor of Clinical Ophthalmology at Barnes Hospital, and Washington University School of Medicine, St. Louis.

SPECIALTY: Ophthalmology.

J. EMERSON DAILEY, M.D.,

Houston, Texas

Consulting Thoracic Surgeon at the Woodmen of the World Tuberculosis Hospital, and Staff Member of the Houston Tuberculosis Hospital, Houston.

SPECIALTY: Thoracic Surgery.



M. EDWARD DAVIS, M.D.,

Chicago, Illinois

Associate Professor of Obstetrics and Gynecology at Rush Medical School, and Staff Member of the Chicago Lying-in Hospital, Chicago Member of the Advisory Committee on Maternal Welfare of the Children's Bureau of the United States Department of Labor.

SPECIALTY: Obstetrics and Gynecology.

GEORGE H. GARDNER, M.D.,

Chicago, Illinois

Assistant Professor of Gynecology at Northwestern University School of Medicine, Staff Member Passavant Hospital, Chicago.

SPECIALTY: Gynecology.



T. ROY GITTINS, M.D.,*Sioux City, Iowa*

Staff Member of St. Joseph's Mercy Hospital, Sioux City.

SPECIALTY: Otolaryngology.**LOUIS J. HIRSCHMAN, M.D.,***Detroit, Michigan*

Professor and Department Head of Proctology at the College of Medicine of Wayne University, head of the Department of Proctology at Harper Hospital, and Staff Member of Women's Hospital, Charles Godwin Jennings Hospital, United States Marine Hospital and Detroit Receiving Hospital, Detroit.

SPECIALTY: Proctology.**ROGER L. J. KENNEDY, M.D.,***Rochester, Minnesota*

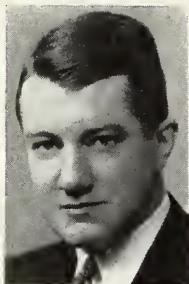
Associate Professor of Pediatrics at the Mayo Foundation Graduate School of the University of Minnesota, Attending Physician in Pediatrics at Colonial Hospital and Staff Member of St. Mary's Hospital and Worrall Hospital, Rochester.

SPECIALTY: Pediatrics.**SUMNER L. KOCH, M.D.,***Chicago, Illinois*

Associate Professor of Surgery at Northwestern University School of Medicine, Attending Surgeon at the Cook County Hospital and Staff Member of Passavant Memorial Hospital, Chicago.

SPECIALTY: Surgery.

Guest Speakers



EUGENE M. LANDIS, M.D.,

Charlottesville, Virginia

Professor of Internal Medicine at the University of Virginia School of Medicine, Charlottesville.

SPECIALTY: Internal Medicine.

JOHN R. NILSSON, M.D.,

Omaha, Nebraska

Chief Surgeon of the Union Pacific Railroad Company, and Professor of Surgery at the University of Nebraska College of Medicine, Omaha.

SPECIALTY: Surgery.



ARTHUR L. SMITH, M.D.,

Lincoln, Nebraska

Chief of the Department of Medicine of St. Elizabeth Hospital and Staff Member of the Lincoln Municipal Clinic, Lincoln.

SPECIALTY: Internal Medicine.

ALBERT M. SNELL, M.D.,

Rochester, Minnesota

Professor of Medicine at the Mayo Foundation Graduate School of the University of Minnesota, Attending Physician at Colonial Hospital and Staff Member of St. Mary's Hospital, Rochester.

SPECIALTY: Internal Medicine.



JOHN A. TOOMEY, M.D.,

Cleveland, Ohio

Associate Professor of Pediatrics at the Western Reserve University, School of Medicine, Physician in charge of the Division of Contageous Diseases at the City Hospital and Associate of Pediatrics, and Contageous Diseases at the University Hospital, Cleveland.

SPECIALTY: Pediatrics.



NATHAN A. WOMACK, M.D.,

St. Louis, Missouri

Associate Professor of Surgery at Washington University School of Medicine, Assistant Surgeon at Barnes Hospital and St. Louis Maternity Hospital and Surgeon to the Outpatient Department of the Washington University School of Medicine, St. Louis.

SPECIALTY: Surgery.

LIEUT. COL. RICHARD H. EANES,

Washington, D. C.

Surgeon Generals Office, Medical Division, National Headquarters of the Selective Service System of Washington.

Member Speakers

JAMES H. BENA, M.D., Pittsburg.

HARWIN J. BROWN, M.D., Winfield.

PORTER BROWN, M.D., Salina

LEROY A. CALKINS, M.D., Kansas City.

HOWARD C. CLARK, M.D., Wichita.

H. O. CLOSSON, M.D., Ashland.

PAUL E. CRAIG, M.D., Coffeyville

MURRAY C. EDDY, M.D., Hays.

CLARENCE W. ERICKSON, M.D., Pittsburg.

EARL L. MILLS, M.D., Wichita.

PHILIP W. MORGAN, M.D., Emporia.

BARRETT A. NELSON, M.D., Manhattan.

ROBERT SOHLBERG, M.D., McPherson.

HENRY N. TIHEN, M.D., Wichita.

JAMES B. WEAVER, M.D., Kansas City.

LOUIS K. ZIMMER, M.D., Lawrence.

Schedule of Events

82nd Annual Session

TOPEKA, MAY 12, 13, 14, 15, 1941

MONDAY, MAY 12

GOLF—Topeka Country Club, Entrance one-half mile west of the intersection of Topeka Avenue and Twenty-ninth Street.

10:00 A. M. Practice Rounds

12:30 P. M. Competitive Shooting

SHOOTING—Isaac Walton Gun Club, Three miles east of Kansas Avenue on Tenth Street, then one-half mile south.

10:00 A. M. Practice

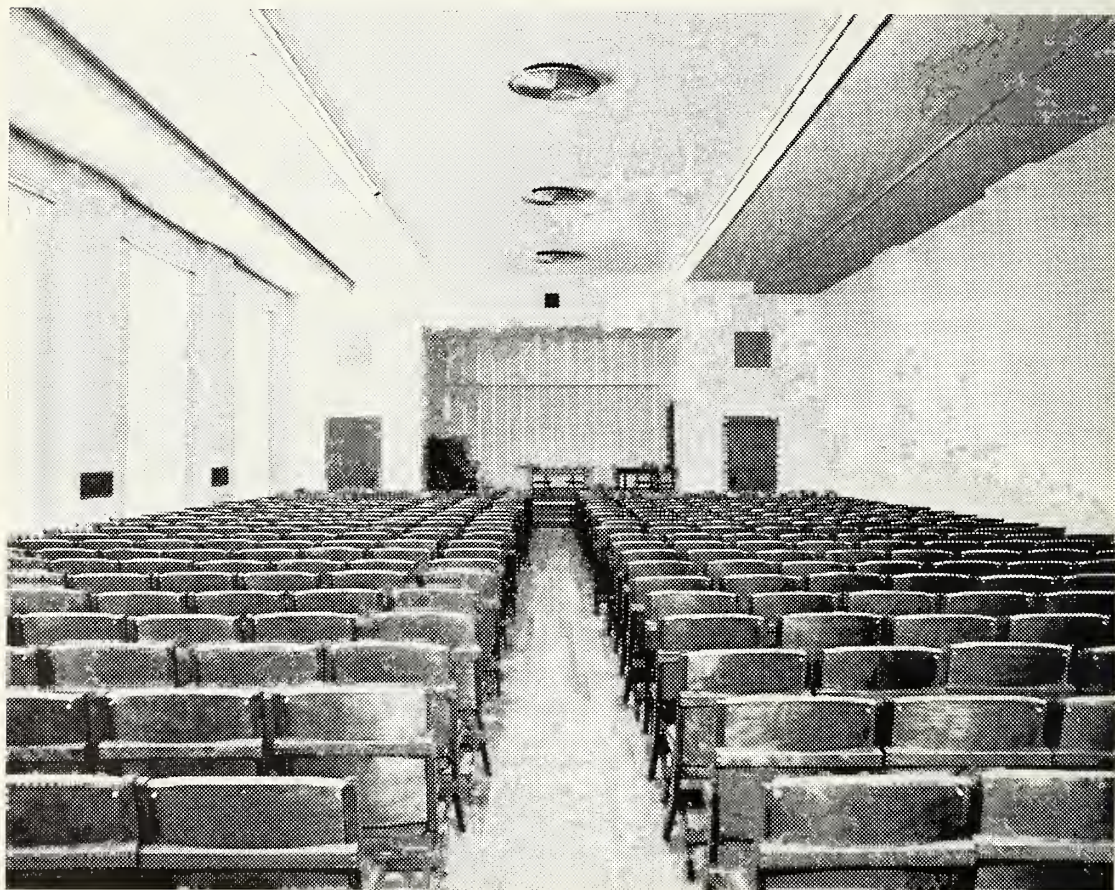
1:30 P. M. Competitive Shooting

ANNUAL GOLF AND TRAP BANQUET—6:30 P. M.

Topeka Country Club

Awarding of Prizes

Election of Officers



Municipal Auditorium—Assembly Room

TUESDAY MORNING, MAY 13**SECTION ON SURGERY**

Presiding: H. Penfield Jones, M.D., Lawrence

9:00 A. M. THE TREATMENT OF ACUTE OSTEOMYELITIS

Room 201

James B. Weaver, M.D., Kansas City

Cases of acute osteomyelitis are reviewed in order to demonstrate the rationale of surgery, blood transfusion, antitoxin, chemotherapy and other measures in their treatment.

Discussion: Raymond J. Dittrich, M.D., Fort Scott

9:50 A. M. THE CONTROL OF THE MECHANISM OF ANESTHETIC REQUIREMENTS

Room 201

Harwin J. Brown, M.D., Winfield

Despite the increasing attention paid anesthesia, one of the still neglected phases, if the subject presents itself in the "routine," is the often illogical preparation of the patient for anesthesia and surgery. Control of the anesthetic requirement is usually rather simple and is on the whole intimately related to the rate of metabolism. The factors influencing this rate are discussed, since some are almost universally overlooked or outrageously neglected. A logical means of control of anesthetic requirement is discussed from a viewpoint that should be of use not only to those practitioners who are administering or supervising anesthesia, but to all others as well.

Discussions: Floyd C. Taggart, M.D., Topeka

10:30 A. M. CANCER OF THE RECTUM

Room 201

Nathan A. Womack, M.D., St. Louis, Mo.

The production of symptoms will be considered as a mechanism resulting from a particular lesion. The nature of these symptoms will be correlated with the type of lesion. The treatment will be discussed based upon the influence of the cause of the disease encountered. Various factors of safety will be elaborated upon as they affect operability and prognosis.

Discussion: W. M. Mills, M.D., Topeka

11:20 A. M. INTERMISSIONS—*See Exhibits***12:00 NOON — ROUND TABLE LUNCHEON**

Jayhawk Hotel Roof Garden

Presiding: H. Penfield Jones, M.D., Lawrence

Guests: Nathan A. Womack, M.D., St. Louis, Mo.
James B. Weaver, M.D., Kansas City

TUESDAY MORNING, MAY 13**SECTION ON CARDIOVASCULAR DISEASES**

Presiding: J. G. Stewart, M.D., Topeka

9:00 A. M. DIAGNOSIS AND TREATMENT OF EARLY CONGESTIVE HEART FAILURE

Assembly Room

Clarence W. Erickson, M.D., Pittsburg

Improved prognosis in congestive heart failure depends on prompt recognition of the condition in its early stages. Accurate diagnosis may be made in a large group of cases and suitable therapy instituted before the patient is bedfast. The prevention of recurrent congestive failure is discussed.

Discussion: Maurice W. Snyder, M.D., Salina

9:40 A. M. DIAGNOSIS OF PERIPHERAL VASCULAR DISEASES

Assembly Room

Eugene M. Landis, M.D., Charlottesville, Va.

A description of the various methods available for distinguishing between those conditions which are due to abnormal responses of structurally normal vessels and those which are due to advancing organic or occlusive disease. Such methods as the usual vasodilatation tests, the histamine test, the oscillometric index, reactive hyperemia, etc., will be described and their scope of usefulness outlined.

Discussion: John M. Porter, M.D., Concordia

10:30 A. M. INTERMISSION—*See Exhibits***10:40 A. M. SUDDEN HEART DEATHS**

Assembly Room

Philip W. Morgan, M.D., Emporia

All heart disease is not accompanied by sudden death, and it is not correct to allow ourselves or the patient to believe otherwise. Cardiac sudden death tho accounting for only four per cent of heart deaths is the commonest sudden death. Certain common etiological and anatomical heart diagnoses are associated with a high (twenty-five to thirty-three per cent) incident of sudden death. Functional cardiac disorders incompatible with life may be precipitated in the above groups. Therapeutic errors in certain situations may cause sudden heart death. Known facts gleaned from the literature and personal experience will be presented with the aim of enabling more accurate prognosis and therapy.

Discussion: Ralph G. Ball, M.D., Manhattan

11:20 A. M. INTERMISSIONS—*See Exhibits***12:00 NOON — ROUND TABLE LUNCHEON**

Kansan Hotel—Assembly Room

Presiding: J. G. Stewart, M.D., Topeka

Guests: Eugene M. Landis, M.D., Charlottesville, Va.

Arthur L. Smith, M.D., Lincoln, Neb.

TUESDAY MORNING, MAY 13**SECTION ON MEDICINE**

Presiding: C. E. Coburn, M.D., Kansas City

9:00 A. M. **THE RECOGNITION AND MANAGEMENT OF THE FUNCTIONAL DISEASER**

Room 202

Robert Sohlberg, Jr., M.D., McPherson

The functional diseaser is that patient whose illness is produced by a disturbed mental state although it may or may not present definite physical signs. He, and those like him, comprises about one-half the patients seen by a general practitioner who frequently does not handle him in the best possible manner. If the functional diseaser is to be treated adequately his physician must exercise the utmost patience, ingenuity, and finesse. The functional diseaser is ever present, his complaints are legion, and his treatment presents one of the most difficult problems of medical practice.

Discussion: Douglas W. Orr, M.D., Topeka

9:40 A. M. **INTERMISSION—See Exhibits**

9:50 A. M. **THE TREATMENT OF PEPTIC ULCER**

Room 202

Henry N. Tihen, M.D., Wichita

There will be discussions of some pathological statistics bearing on the question of the treatment of ulcer, of the question of the lack of malignant degeneration in ulcer and of the problems in the treatment of ulcer and its complications.

Discussion: H. O. Bullock, M.D., Independence

10:30 A. M. **THE PROBLEM OF CONTROLLING TUBERCULOSIS**

Room 202

J. Emerson Dailey, M.D., Houston, Texas

From the public health point of view, the most dangerous case of tuberculosis is the open case. The necessity for the creation of laws regulating compulsory isolation and quarantine of the contagious cases is pointed out. The ideal tuberculosis institution is described with a discussion of the necessary facilities and personnel for all types of treatment. Emphasis in case findings is placed upon the x-ray and particularly the examination of adults. Various mass survey programs are described, and the importance of the follow-up and rehabilitation of the patient is mentioned.

Discussion: Charles F. Taylor, M.D., Norton

11:20 A. M. **INTERMISSION—See Exhibits**

12:00 NOON — **ROUND TABLE LUNCHEON**

Kansan Hotel—Kansan Room

Presiding: C. E. Coburn, M.D., Kansas City

Guest: J. Emerson Dailey, M.D., Houston, Texas

TUESDAY AFTERNOON, MAY 13**FIRST GENERAL SESSION***Assembly Room*

Presiding: F. L. Loveland, M.D., Topeka

1:50 P. M. ADDRESS OF WELCOME

Lucien R. Pyle, M.D., Topeka, President, Shawnee County Medical Society

1:55 P. M. PRESIDENT'S ADDRESS

Forrest L. Loveland, M.D., Topeka, President, Kansas Medical Society

2:10 P. M. CARDIAC MURMURS

Arthur L. Smith, M.D., Lincoln, Neb.

This will be illustrated with photographs of the heart sounds and pulse, electrocardiograms, reproduction of the recorded heart sounds and auditing of heart sounds directly from patients. Heart murmurs and heart disease are not synonymous, but murmurs can result from organic or functional heart changes.

2:55 P. M. THE PATHOGENESIS OF CHOLECYSTITIS

Nathan A. Womack, M.D., St. Louis, Mo.

Adequate therapy in cholecystitis is definitely dependent upon the nature of the disease process. Previous conceptions of the origin of cholecystitis will be discussed critically and additional evidence brought forward both clinically and experimentally as to the underlying process involved in the production of the disease and its symptoms. Therapeutic considerations will be based on the above factors.

3:40 P. M. SURVEY OF THERAPY OF PERIPHERAL VASCULAR DISEASES

Eugene M. Landis, M.D., Charlottesville, Va.

The methods of treatment including physical, medical, and surgical measures, with remarks concerning the rationale, indications, contraindications, and results for each method. Our gradual understanding of the limitations of conservative therapy will be emphasized.

4:25 P. M. THE ACTIVE TREATMENT OF TUBERCULOUS CAVITIES IN THE LUNGS

J. Emerson Dailey, M.D., Houston, Texas

There will be a summary of all the collapse measures, including pneumothorax, pneumonolysis, extra-pleural pneumothorax, thoracoplasty, and Monaldi Drainage. The indications for each of these procedures will be briefly listed along with possible complications. Lantern slides of chest x-rays will be shown, illustrating cases before and after each type of procedure.

5:10 P. M. MEDICAL ASPECTS OF THE SELECTIVE SERVICE ACT

Lt. Col. Richard H. Eanes, Washington, D. C.

Introduction: Brigadier General M. R. McLean, Adjutant General of the State of Kansas and State Director of the Kansas Selective Service Board.

The material to be given by Lt. Col. Eanes in this address has particular reference to work and activities of physicians, regarding the selective service act, whether this be serving on a local draft board, an induction board or a medical advisory board.

TUESDAY EVENING, MAY 13

- 6:30 P. M. SECRETARIES DINNER
Jayhawk Hotel—Roof Garden
- 6:30 P. M. KANSAS HEART ASSOCIATION DINNER
Jayhawk Hotel—Green Room
Guests: Eugene M. Landis, M.D., Charlottesville, Va.
Arthur L. Smith, M.D., Lincoln, Nebr.
- 6:30 P. M. KANSAS OBSTETRICAL AND GYNECOLOGICAL SOCIETY
Charter Membership Dinner
Jayhawk Hotel—Green Room
Business Session at 7:30 P. M.
- 6:30 P. M. EYE, EAR, NOSE AND THROAT SOCIAL HOUR AND DINNER
Kansan Hotel—Kansan Room
- 8:00 P. M. MOTION PICTURES
Jayhawk Hotel—Roof Garden
RESOURCEFUL KANSAS—Kansas Industrial Development Commission.
WHEN BOBBY GOES TO SCHOOL—Courtesy of Mead Johnson Company.
DOG SURGERY—Clyde O. Merideth, Jr., M.D., and Thomas P. Butcher, M.D., Emporia.
- 8:00 P. M. HOUSE OF DELEGATES MEETING
Jayhawk Hotel—Convention Hall

HOUSE OF DELEGATES

The meeting of the House of Delegates will be held on Tuesday, May 13 at 8:00 P. M. at the Jayhawk Hotel and on Thursday, May 15 at the Municipal Auditorium at 4:00 P. M. The first regular meeting will be devoted to the reports of officers, councilors, committees and other business. The second regular meeting will include the annual election of officers and the completion of unfinished business.

The reference committee plan utilized last year will again be used and is believed will save a considerable time in the handling of the proceedings of the House of Delegates. A Reference Committee on Reports of Officers and Councilors and one on Committee Reports and Resolutions will be appointed, and will receive and consider resolutions and the reports of officers, councilors and committees in advance of the first meeting of the House of Delegates. The reference committees will then present recommendations to the House of Delegates concerning the adoption of reports and resolutions. Likewise resolutions and new business introduced at the first regular meeting of the House of Delegates may be referred to these committees for presentation and recommendation at the second meeting.

A reserved section will be provided at the House of Delegates meeting place for the seating of delegates. Delegates will be registered at the entrance of the meeting place which will entitle them to sit in the reserved section. It is thought that this arrangement will eliminate the necessity for roll calls, and that it will thereby expedite the voting. Delegates are requested to present letters of authority or other certifications from their county medical societies.

The constitution and by-laws provides that each county medical society shall be entitled to send to the House of Delegates each year, one duly qualified delegate for every twenty members, and one duly qualified delegate for each major fraction thereof; provided that each component society has made its annual report and paid its assessments as provided in the constitution and by-laws. In the event that a delegate finds it impossible to attend, the by-laws provide that he shall appoint an alternate to attend and serve in his place and that each such alternate shall qualify himself to the Committee on Credentials.

Many matters of extreme importance are scheduled upon the agenda for this year's House of Delegates meetings, and every county medical society is urged to have its delegates or alternates present at both of the meetings.

All members of the society are invited to attend the meetings of the House of Delegates.

WEDNESDAY MORNING, MAY 14

SECTION ON SURGERY

Presiding: John L. Grove, M.D., Newton

9:00 A. M. THE DIFFERENTIAL DIAGNOSIS OF ACUTE UPPER ABDOMINAL PAIN

Room 201

Murray C. Eddy, M.D., Hays

A discussion of the various conditions which may cause acute upper abdominal pain, with their outstanding characteristics of differentiation. Emphasis on the importance of a complete examination of the patient rather than placing full reliance on abdominal examination alone.

Discussion: N. E. Melencamp, M.D., Dodge City

9:40 A. M. THE OPEN REDUCTION OF FRACTURES

Room 201

John R. Nilsson, M.D., Omaha, Neb.

A discussion of the open reduction of severe fractures, illustrated with lantern slides and emphasizing the necessity of a good anatomical result in order to secure the two principal objectives in the treatment of any fracture; namely, the restoration of normal function and the prevention of deformity.

Discussion: Charles R. Rombold, M.D., Wichita

10:30 A. M. THE REPAIR OF DIVIDED NERVES AND TENDONS

Room 201

Sumner L. Koch, M.D., Chicago, Ill.

A number of surgical principles are of great importance. The immediate care of the open wound, the diagnosis of the extent of injury, preparation of the field of operation, and the exact technique employed, must be considered both in primary and secondary operations. Adequate exposure, anatomical restoration, use of a bloodless field, and the choice of suture material are important considerations. Purposeful splinting after operation during the period of nerve and tendon healing and thoughtfully applied physical therapy are essential for successful results.

Discussion: L. S. Nelson, M.D., Salina

11:15 A. M. INTERMISSIONS—*See Exhibits*

12:00 NOON — ROUND TABLE LUNCHEON

Jayhawk Hotel Roof Garden

Presiding: C. R. Rombold, M.D., Wichita

Guests: Sumner L. Koch, M.D., Chicago, Ill.
John R. Nilsson, M.D., Omaha, Neb.

WEDNESDAY MORNING, MAY 14**SECTION ON PEDIATRICS**

Presiding: Paul E. Belknap, M.D., Topeka

9:00 A.M. THE MANAGEMENT OF NEPHRITIS AND EDEMA IN CHILDREN

Assembly Room

James H. Bena, M.D., Pittsburg

Edema and nephritis in children call for management of the patient rather than the disease. Serum protiens must be kept at or near a normal level. Establishment of a normal nitrogen balance is essential. Nutrition in all its phases must be managed rationally. The problem of foci of infection should be approached with care. Perhaps tonsilectomy should be avoided.

Discussion: B. I. Krehbiel, M.D., Topeka

9:40 A.M. THE DIFFERENTIAL DIAGNOSIS OF MENINGEAL IRRITATIONS

Assembly Room

John A. Toomey, M.D., Cleveland, Ohio

A discussion of the history of the illness, appearance of the patient, the physical findings including neurologic changes, spinal fluid findings and special laboratory tests in all cases of meningeal irritations.

Discussion: Harlan Crank, M.D., Topeka

10:30 A.M. THE SIGNIFICANCE OF VOMITING AND DIARRHEA IN INFANTS AND CHILDREN

Assembly Room

Roger L. J. Kennedy, M.D., Rochester, Minn.

A consideration of conditions occurring in infants and children in which vomiting and diarrhea are prominent symptoms. The presentation is arranged to consider these symptoms according to the various age periods such as the newborn, the period of early infancy, the period of late infancy and the period of early and late childhood. The conditions included are the atresias, congenital transduodenal bands, pyloric stenosis, diaphragmatic hernia, cerebral birth trauma, intussusception, parenteral infections, appendicitis, cyclic vomiting, brain tumor, epidemic diarrhea of the newborn, improper feeding, intoxication, typhoid fever, celiac disease, chronic ulcerative colitis and diffuse polypoidosis of the colon.

Discussion: Donald N. Medearis, M.D., Kansas City.

11:20 A.M. INTERMISSIONS—See Exhibits**12:00 NOON — ROUND TABLE LUNCHEON**

Kansan Hotel—Assembly Room

Presiding: Paul E. Belknap, M.D., Topeka

Guests: John A. Toomey, M.D., Cleveland, Ohio
Roger L. J. Kennedy, M.D., Rochester, Minn.

WEDNESDAY MORNING, MAY 14

SECTION ON GYNECOLOGY

Presiding: Ray A. West, M.D., Wichita

9:00 A. M. MANAGEMENT OF THE MENOPAUSAL SYNDROME WITH STILBESTROL

Room 202

Louis K. Zimmer, M.D., Lawrence

Treatment of the menopausal syndrome and other conditions due to ovarian insufficiency, with the new synthetic drug stilbestrol and its derivatives, promises to be an important advancement of therapy. Reports of toxic side effects have hampered the introduction of this preparation but such toxic effects are encountered less frequently when the dosage is kept near the minimum effective level. Much smaller doses than heretofore recommended have been used in this series of sixty menopausal cases with good results in eighty-three per cent and undesirable side effects in 5.5 per cent of all cases receiving stilbestrol dipropionate.

Discussion: Lucien R. Pyle, M.D., Topeka

9:40 A. M. INTERMISSION—*See Exhibits*

9:50 A. M. ENDOMETRIOSIS

Room 202

Howard C. Clark, M.D., Wichita

History of etiology, the pathologic picture, symptoms and treatment of endometriosis. Illustrated by lantern slides.

Discussion: L. J. Lewis, M.D., McPherson

10:30 A. M. GYNECOLOGICAL MANAGEMENT OF THE "BARREN MARRIAGE"

Room 202

George H. Gardner, M.D., Chicago, Ill.

Women tend to assume full responsibility for their inability to become pregnant and most scientific papers dealing with this problem have been entitled "Female Sterility." However, the author prefers the term "Barren Marriages" because it emphasizes the mutual responsibility of both the husband and the wife, in their failure to have a family. The majority of barren marriages result, not from a single cause in one party, but from a multiplicity of factors in both parties; some may seem trivial but, added together, they are sufficient to prevent conception. Successful management, therefore, depends on adequate examination of both the husband and the wife, followed by systematic elimination of every contributing factor. This presentation, first, enumerates the essentials of a diagnostic study which should reveal most of the factors that contribute to a couple's infertility. It then deals with the accepted present-day treatment for those factors which occur in women.

Discussion: Harold V. Holter, M.D., Kansas City

11:20 A. M. INTERMISSIONS—*See Exhibits*

12:00 NOON — ROUND TABLE LUNCHEON

Kansan Hotel—Kansan Room

Presiding: Ray A. West, M.D., Wichita

Guest: George H. Gardner, M.D., Chicago, Ill.

WEDNESDAY AFTERNOON, MAY 14**SECOND GENERAL SESSION***Assembly Room*

Presiding: F. L. Loveland, M.D., Topeka

2:00 P. M. CHEMOTHERAPY IN ACUTE INFECTIOUS DISEASES

John A. Toomey, M.D., Cleveland, Ohio

This lecture will be demonstrated with lantern slides. There will be a discussion of the results following the use of sulfanilamide, sulfapyridine, sodium monohydrate sulfapyridine, sulfathiazole and Promin in such acute infectious diseases as pneumonia, meningitis of various kinds, erysipelas, scarlet fever, the virus diseases, etc.

2:45 P. M. PREVENTION AND CONTROL OF SURGICAL INFECTIONS IN A GENERAL HOSPITAL

Sumner L. Koch, M.D., Chicago, Ill.

The prevention of surgical infections involves careful attention to a multitude of details. The sources of infection which are of particular importance to the surgeon and those over which he has definite control are the operating room personnel, the visitors and students, the patient's skin, suture material, the dressings, supplies and solutions which are used in the operating room.

3:30 P. M. LEUKORRHEA

George H. Gardner, M.D., Chicago, Ill.

A discussion of the varying types of leucorrhea from an etiological standpoint considering the source and the pathological changes in the organic structures involved. Accurate diagnosis of the type of the infection as well as the selection of the therapeutic agents or methods will be stressed.

4:15 P. M. ABDOMINAL EMERGENCIES IN INFANTS AND CHILDREN

Roger L. J. Kennedy, M.D., Rochester, Minn.

This discussion deals especially with acute appendicitis, intussusception, strangulated inguinal hernia, Meckel's diverticulum, volvulus, tumors and trauma. An attempt is made to evaluate the significance of pain, vomiting, tenderness, rigidity, palpable masses, and abdominal distention in the recognition of these conditions. In the differential diagnosis a number of other nonsurgical diseases are mentioned.

THURSDAY MORNING, MAY 15**SECTION ON SURGERY**

Presiding: Frank Foncannon, M.D., Emporia

9:00 A. M. THE NICOLL FLAP OPERATION FOR EMPYEMA

Room 201

Barrett A. Nelson, M.D., Manhattan

Nicoll's operation combines the advantages of open drainage and closed drainage furnishing evacuation of pus, efficient exclusion of air, on lung collapse, and prompt recovery. Operative technique will be described.

Discussion: E. C. Padgett, M.D., Kansas City

9:40 A. M. INTERMISSION—*See Exhibits***9:50 A. M. A SIMPLE AND EFFECTIVE TECHNIC OF HEMORRHOIDECTOMY**

Room 201

Louis J. Hirschman, M.D., Detroit, Mich.

Differential diagnosis between hemorrhoids and other conditions which present similar symptoms as well as the difference between internal and external hemorrhoids are discussed. Various types of anesthesia are mentioned and the author's reasons for the employment of nonsleeping anesthesia is stressed. Hemorrhoidectomy without the employment of dilatation or divulsion, the use of specula, sutures, packing, clamps, or cautery is described. Lantern slides and colored moving pictures supplement the talk.

Discussion: Claude C. Tucker, M.D., Wichita

10:40 A. M. COBRA VENOM ANALGESIA IN SURGERY

Room 201

Paul E. Craig, M.D., Coffeyville

The routine pre and postoperative use of cobra venom greatly reduces the narcotic requirement of the surgical patient and effects an analgesia comparable to that of morphine, dilaudid or pantopon but is more prolonged in its action. It is safe and can be administered repeatedly over long periods without the hazard of addiction. It leaves the patient conscious and cooperative, stimulates the appetite, tends to prevent the occurrence of an adynamic ileus and effectively relieves postoperative pain and discomfort.

Discussion: C. O. Shepard, M.D., Independence.

11:20 A. M. INTERMISSION—*See Exhibits***12:00 NOON — ROUND TABLE LUNCHEON**

Jayhawk Hotel Roof Garden

Presiding: Claude C. Tucker, M.D., Wichita

Guest: Louis J. Hirschman, M.D., Detroit, Mich.

THURSDAY MORNING, MAY 15**SECTION ON MEDICINE**

Presiding: Benjamin W. Lafene, M.D., Marysville

9:00 A. M. RELAPSING FEVER

Assembly Room

H. O. Closson, M.D., Ashland

History, distribution, etiology, transmission, clinical picture, diagnosis, prophylaxis, and treatment of relapsing fever, especially as it occurs in Kansas.

Discussion: James H. A. Peck, M.D., St. Francis

9:40 A. M. INTERMISSION—See Exhibits**9:50 A. M. IRON DEFICIENCY ANEMIAS**

Assembly Room

Earl L. Mills, M.D., Wichita

A brief historical notation of the types of hypochromic iron deficiency anemias, the prevalence of the disturbance and the blood findings. Emphasis will be placed on the fact that generally a blood loss must be found. A critical discussion of treatment and preparations for treatment will follow, and an evaluation of the results that may be expected.

Discussion: L. J. Kleinheksel, M.D., Wichita

10:20 A. M. INTERMISSION—See Exhibits**10:30 A. M. CHANGING CONCEPTIONS OF PORTAL CIRRHOSIS**

Assembly Room

Albert M. Snell, M.D., Rochester, Minn.

There is good reason to believe that some alteration in the chemical pattern of the liver, such as alterations which can be produced by variations in the diet, may be necessary for the full effect of hepatotoxic agents on the organ. Deficiency in the intake of carbohydrate, protein, the vitamin B complex and choline can be shown to either damage the liver or leave it vulnerable to toxins of exogenous or endogenous origin. On this basis, portal cirrhosis is, in a sense, a deficiency disease. The fully developed clinical syndrome is characterized by symptoms of deficiency in respect to plasma proteins, the antipernicious anemia factor, certain constituents of the B complex and prothrombin. Treatment directed toward correction of dietary and vitamin deficiencies has been productive of some encouraging clinical results.

Discussion: W. L. Anderson, M.D., Atchison

11:15 A. M. INTERMISSIONS—See Exhibits**12:00 NOON — ROUND TABLE LUNCHEON**

Kansan Hotel—Assembly Room

Presiding: Benjamin W. Lafene, M.D., Marysville

Guest: Albert M. Snell, M.D., Rochester, Minn.

THURSDAY MORNING, MAY 15**SECTION ON OBSTETRICS**

Presiding: Howard Rush, M.D., Pittsburg

9:00 A. M. X-RAY STUDIES OF THE FEMALE PELVIS

Room 202

Porter Brown, M.D., Salina

Previous standards set up for the normal female pelvis have not taken into account the complete contour of the pelvic inlet, the depth of the true pelvis, the degree of convergence of the side wall, the attitude, size or shape of the ischial spines, the width of the sacroiliac notch, the form of the sub-pubic arch, the width of the sacrum, nor the attitude of the coccyx. In 1933, Caldwell and Moloy established a new classification which we have used. The first thirty primipara examined revealed examples of all types so that we can now report our findings, prognosis, and results proven by delivery. If it becomes necessary to interfere or assist labor, one is better prepared if he understands the causes of obstruction and the attitude of the presenting parts whether it be failure to enter the inlet or failure to advance at any given level of the pelvis.

Discussion: C. O. Merideth, M.D., Emporia

9:40 A. M. PROLONGED LABOR

Room 202

Leroy A. Calkins, M.D., Kansas City

Our ideas as to the causes of prolonged labor have been based largely on superstition, individual personal opinion, and certain confusion between the first and second stage of labor. Recently collected data is presented to show quite conclusively that the length of the first stage of labor is purely a question of the balance between the labor pains on the one hand and the total resistance offered by the cervix on the other hand.

Discussion: Paul B. Young, M.D., Wichita

10:30 A. M. THE USE AND ABUSE OF CESAREAN SECTION

Room 202

M. Edward Davis, M.D., Chicago, Ill.

A discussion of the present-day indications and contraindications of cesarean section, with special consideration of the morbidity and mortality of this important operation.

Discussion: A. S. Hawkey, M.D., Newton

11:20 A. M. INTERMISSIONS—See Exhibits**12:00 NOON — ROUND TABLE LUNCHEON**

Kansas Hotel—Kansan Room

Presiding: Howard Rush, M.D., Pittsburg

Guests: M. Edward Davis, M.D., Chicago, Ill.
L. A. Calkins, M.D., Kansas City

THURSDAY AFTERNOON, MAY 15**THIRD GENERAL SESSION***Assembly Room*

Presiding: F. L. Loveland, M.D., Topeka

1:30 P. M. THE OFFICE TREATMENT OF ANO-RECTAL DISEASES AND ITS LIMITATIONS

Louis J. Hirschman, M.D., Detroit, Mich.

While it is true that some diseases of the anus and rectum can be treated in the physician's office, there exist definite limitations. Where, for physical, psychic, emotional, economic, or other reasons, hospitalization for some of the less severe types of ano-rectal diseases is not permitted, certain methods of office procedure can be utilized. These are described and the talk illustrated by lander slides. The limitations of office treatment and some of the pitfalls to be avoided are emphasized.

2:15 P. M. THE PREVENTION AND TREATMENT OF POSTPARTUM HEMORRHAGE

M. Edward Davis, M.D., Chicago, Ill.

A careful study of the third stage of labor will be presented. The treatment of the third stage in the home and the hospital will be discussed. New conduct of this phase of labor that has been under trial at the Chicago Lying-in Hospital for the past four years will be considered.

3:00 P. M. RECENT ADVANCES IN VITAMIN THERAPY

Albert M. Snell, M.D., Rochester, Minn.

The structure and site of action of the various vitamins are now fairly well known and in many instances a good explanation of their physiologic function is available. The symptoms produced by deficient intake or utilization of each may be confused by the fact that multiple deficiencies are the rule rather than the exception. The circumstances under which deficiency symptoms are seen clinically are well defined. Deficiency states develop (1) because of a long continued deficient diet and (2) because of disease processes involving the gastro-intestinal tract which interfere with the absorption of ingested vitamins. Acute deficiencies in respect to thiamine chloride, nicotinic acid and ascorbic acid and vitamin K may develop under certain conditions (pregnancy, hyperthyroidism and the postoperative state). The problem of treatment of both acute and chronic deficiencies will be discussed.

4:00 P. M. HOUSE OF DELEGATES MEETING*Auditorium—Room 101*

EYE, EAR, NOSE AND THROAT SECTION

Auditorium—Room 101

Presiding: T. W. Weaver, M.D., Wichita

TUESDAY, MAY 13

- 9:00 A. M. OFFICE PROCEDURES
B. Y. Alvis, M.D., St. Louis, Mo.
- 10:45 A. M. INTERMISSION—*See Exhibits*
- 11:00 A. M. HEADACHE AND NEURALGIA—DIFFERENTIAL DIAGNOSIS
T. Roy Gittins, M.D., Sioux City, Iowa
- 12:00 Noon ROUND TABLE LUNCHEON
Jayhawk Hotel—Green Room
Presiding: Lyle S. Powell, M.D., Lawrence
Guests: B. Y. Alvis, M.D., St. Louis, Mo.
T. Roy Gittins, M.D., Sioux City, Iowa
- 2:00 P. M. LARYNGO-TRACHEO-BRONCHITIS
T. Roy Gittins, M.D., Sioux City, Iowa
- 3:00 P. M. INTERMISSION—*See Exhibits*
- 3:15 P. M. SURGICAL PROCEDURES
B. Y. Alvis, M.D., St. Louis, Mo.
- 6:00 P. M. SOCIAL HOUR
Kansan Hotel—Kansan Room
Hosts; Topeka Otolaryngologists
- 7:00 P. M. DINNER
Kansan Hotel—Kansan Room

WEDNESDAY, MAY 14

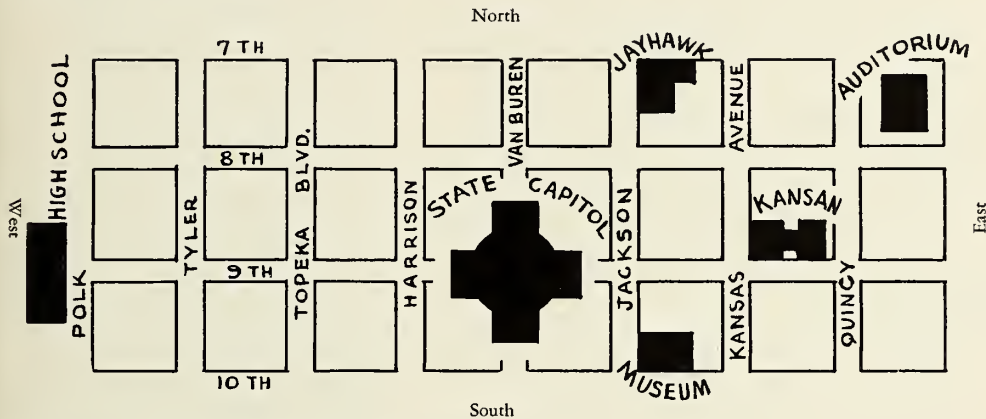
Presiding: T. W. Weaver, M.D., Wichita

- 9:00 A. M. THE ACUTE CHEST: STANDPOINT OF BRONCHOLOGY.
T. Roy Gittins, M.D., Sioux City, Iowa
- 10:30 A. M. INTERMISSION—*See Exhibits*
- 10:45 A. M. DISORDERS OF THE OPTIC NERVE
B. Y. Alvis, M.D., St. Louis, Mo.
- 11:15 A. M. INTERMISSION—*See Exhibits*
- 12:00 Noon ROUND TABLE LUNCHEON
Jayhawk Hotel—Green Room
Presiding: R. E. Cheney, M.D., Salina
Guests: B. Y. Alvis, M.D., St. Louis, Mo.
T. Roy Gittins, M.D., Sioux City, Iowa
- 2:00 P. M. HEAD SPECIALTIES: EVERY-DAY PRACTICE
T. Roy Gittins, M.D., Sioux City, Iowa
- 3:00 P. M. INTERMISSION—*See Exhibits*
- 3:15 P. M. SURGICAL PROCEDURES
B. Y. Alvis, M.D., St. Louis, Mo.

PLACE OF MEETING

The new Municipal Auditorium has been selected as the place of meeting for this year's annual session. The building is located on Quincy Street between Seventh and Eighth Streets.

All events of the meeting with the exception of the round table luncheons, the banquets, the Tuesday House of Delegates meeting, and the golf and trap tournaments will be held at the Auditorium.



HOTEL ACCOMMODATIONS

Topeka has ample hotel accommodations. A suggestion is made though if you have not already made a hotel reservation that you do so at once. The names of Topeka hotels, their locations and their rates are as follows:

Hotel and Location	Single	Double	Twin Beds	Four Persons
*JAYHAWK				
Seventh and Jackson	\$2.00	\$4.00	\$4.50	
2 blocks from	to	to	to	\$6.00
Municipal Auditorium	\$4.50	\$6.00	\$6.00	
*KANSAN				
Ninth and Kansas	\$1.75	\$3.00	\$4.00	\$4.00
2 blocks from	to	to	to	to
Municipal Auditorium	\$2.25	\$4.50	\$5.00	\$6.00
*CAPITOL				
Fifth and Kansas	\$1.25	\$1.75		
3 blocks from	to	to		
Municipal Auditorium	\$2.00	\$3.00		
THROOP				
Fourth and Kansas	\$1.00	\$2.00	\$2.00	\$3.00
4 blocks from	to	to	to	to
Municipal Auditorium	\$1.50	\$2.50	\$4.00	\$6.00
COMMERCE				
612 Kansas	\$1.00	\$1.50		\$3.00
2 blocks from	to	to	\$2.25	to
Municipal Auditorium	\$1.25	\$2.00		\$4.00
REID				
Fourth and Kansas	\$1.00	\$1.50	\$2.00	\$3.00
4 blocks from	to	to	to	to
Municipal Auditorium	\$1.50	\$2.50	\$3.00	\$4.00
COLONIAL				
222 East Fifth	\$0.75	\$1.50		
3 blocks from	to	to	\$2.00	\$2.00
Municipal Auditorium	\$1.00	\$2.00		

If any difficulties are experienced in obtaining adequate reservations either before or upon arriving in Topeka, Dr. Lucius E. Eckles, 605 Mills Building, Topeka, Chairman of the Committee on Accommodations, will be glad to offer assistance.

* Jayhawk, 300 room; Kansan, 300 rooms; Capital, 100 rooms.

KANSAS MEDICAL WOMEN'S SOCIETY

The Kansas Medical Women's Society, which is a division of The American Medical Women's Association, will hold its annual meeting on Wednesday, May 14, at 12:00 Noon at the Creamerie Restaurant in Topeka. Luncheon will be served in a private dining room. Dr. Florence Chapman and Dr. Elvenor Ernest will entertain the group at luncheon. All women in the state whether or not they are members are most cordially invited to attend.

CORA E. DYCK, M. D., *President.*

Events for Women

MONDAY, MAY 12—Play Day

- 2:00 P. M. LADIES GOLF AND BRIDGE
Shawnee Country Club
- 6:00 P. M. DINNER, Shawnee Country Club

TUESDAY, MAY 13

- 8:00 A. M. REGISTRATION, open until 6:00 P. M.
- 10:00 A. M. BOARD OF DIRECTORS MEETING
Jayhawk Hotel—Mezzanine Floor
- 1:00 P. M. PAST PRESIDENTS LUNCHEON
- 6:00 P. M. DINNER AND ENTERTAINMENT Honoring the Following
County Auxiliary Presidents: *Women's Club Building*

Mrs. H. W. Jury, Claflin
Mrs. Patrick S. Brady, Hays
Mrs. E. R. Gelvin, Concordia
Mrs. R. G. Klein, Dodge City
Mrs. G. A. Hay, Parsons
Mrs. W. W. Weltmer, Beloit
Mrs. James F. Edwards, Chanute
Mrs. W. D. Pitman, Pratt
Mrs. H. L. Scales, Hutchinson
Mrs. P. L. Beiderwell, Belleville

Mrs. Earl L. Vermillion, Salina
Mrs. H. R. Hodson, Wichita
Mrs. Ransley J. Miller, Topeka
Mrs. F. A. Moorehead, Neodesha
Mrs. H. L. Regier, Kansas City
Mrs. Thomas P. Butcher, Emporia
Mrs. H. O. Bullock, Independence
Mrs. W. R. Breeding, Marysville
Mrs. H. G. Snyder, Seneca
Mrs. M. Trueheart, Sterling

WEDNESDAY, MAY 14

- 8:00 A. M. REGISTRATION
- 9:45 A. M. GENERAL SESSION
Jayhawk Hotel—Convention Hall
- 1:00 P. M. LUNCHEON Honoring Officers and Board Members
Topeka Country Club—Period Fashion Show
- Dr. and Mrs. Forrest L. Loveland, Topeka Dr. and Mrs. Clyde D. Blake, Hays
Dr. and Mrs. C. Omer West, Kansas City
- 3:00 P. M. POST CONVENTION BOARD MEETING
Topeka Country Club
- 7:00 P. M. BANQUET
Topeka High School
- 9:00 P. M. DANCE
Jayhawk Hotel—Roof Garden

THURSDAY, MAY 15

- 12:30 P. M. LUNCHEON
Women's Club Building
- 2:00 P. M. AFTERNOON MEETING
Women's Club

Auxiliary

PRESIDENT'S MESSAGE



MRS. T. D. BLASDEL

If we were asked to select two answers from a number that might be given to the question "Why attend the state convention?" I wonder if one answer would not be, "I shall know better my own responsibility to our Auxiliary at home" or "Doctor's wives have so much in common." We know there is power in organization and good team work is an essential factor in any undertaking and thru solidarity we gain a sense of security. At this convention we expect to gain further impetus which will help us to attain the goals we are striving to win.

The President of Shawnee County Auxiliary, Mrs. Ransley Miller, your Convention Chairman, Mrs. F. C. Taggart, your State President and various committees have been working out a program by means of which we expect to enable our convention to run smoothly, be enjoyable, that provoking and informative, convening promptly and adjourning on time.

We have always enjoyed going to Topeka. This year we can't afford to miss it. Come Monday for golf or bridge or just to visit at the Topeka Country Club and we'll have dinner together there. Come enjoy every feature planned, and stay till Thursday. Come and bring your husband.

The General Assembly meeting of the Auxiliary where every doctor's wife is most cordially invited is Wednesday in Convention Hall at the Jayhawk Hotel at 9:45 A. M. You'll enjoy our business session and our speaker at this meeting. Mrs. D. N. Medearis of Kansas City will speak on the subject "Our Possibilities and Responsibilities."

Wednesday at the luncheon before the fashion show Dr. C. Omer West will discuss the subject "Auxiliary in Action" and Dr. F. L. Loveland will speak on "News from the Front," while Dr. C. D. Blake's topic is "What Next?"

This year we've stressed self education, public relations and organization and your cooperation in these and each department of our program has been most gratifying. We have especially tried to encourage study of health conditions in our own localities and of the state. Many hundred of the laity have been reached thru public relations work and if you'll read our printed state reports you'll agree our work is far reaching. Five organizations have been added to our membership this year.

May I express my appreciation to Mr. Munns and his staff for their hearty cooperation thru the year, to Dr. West and his advisory committee for their helpful suggestions and support and to Dr. Loveland the State President for his courteous assistance.

With the sincerest of best wishes to each of you and for the work you will be undertaking next year.

MRS. T. D. BLASDEL, *President.*

PRESIDENT-ELECT'S MESSAGE

The key-note of all the divisions of Women's Auxiliary to The Kansas Medical Society will be: "Understanding and Tolerance Acquired Through Cooperation and Friendship." We gain strength and achieve success only through united efforts in purpose and constructive objectives.

Program materials and plans of the National Auxiliary will be given through the medium of the National Bulletin to all state and county auxiliaries. We therefore urge that all incoming officers and chairmen subscribe to this publication. We also hope that every member will read it regularly for we will progress only through an informed membership.

We, each of us, have our specific interests and talents; shall we not let them find expression in our own auxiliary?

May the new year bring us all a new understanding of our needs and may we have the opportunity to use the potential strength of every one of our members.

MRS. W. Y. HERRICK, *President-Elect.*



MRS. W. Y. HERRICK

Scientific Exhibits

It is believed that the scientific exhibits scheduled for the 82nd Annual Session will be of interest to all members. The exhibits will be located on the first floor of the Auditorium and will be open from 8:00 A. M. to 6:00 P. M. daily.

Shawnee County Health—Shawnee County Health Department.

Cancer, Maternal Hygiene and Tuberculosis Education—Kansas State Board of Health.

Public Welfare in Kansas—State Board of Social Welfare.

Cutaneous Granulomas—American Medical Association.

Cutaneous Manifestations of Syphilis—American Medical Association.

Pathological Specimens of Communicable Diseases, prepared by Division of Veterinarian Medicine, Kansas State College—Kansas Veterinary Medical Association.

Fungus Allergies—A. J. Brier, M.D., Topeka.

Morphologic Biology of Tuberculosis—Kansas Tuberculosis and Health Association.

Silicosis—Joseph W. Spearing, M.D., Columbus.

Fracture of the Neck of the Femur—Howard E. Snyder, M.D., Winfield.

Surgical Treatment of Hypertension—Cecil Snyder, M.D., Winfield.

The Psychoses of Old Age—G. Wilse Robinson, M.D., Kansas City.

The Progress of Kansas Nurses—Kansas State Nurses Association.

Antique Surgical Instruments and Books—Kansas Medical Auxiliary.

Paper Casts—L. S. Nelson, M.D., Salina.

Surgical Treatment of Deafness—LaVerne B. Spake, M.D., Kansas City.

Cancer—The Kansas Women's Field Army.

Ulcerating Lesions of the Stomach and Duodenum—James S. Hibbard, M.D., and Samuel L. Stout, M.D., Wichita.

Recognition and Treatment of Curable Diseases of the Heart—Maurice Snyder, M.D., Salina.

Exhibit by Committee on Maternal Welfare—

Exhibit by Committee on the Study of Heart Disease—

Treatment of Tachycardia—Graham Asher, M.D., University of Kansas School of Medicine.

Acute Rheumatic Heart Disease and its Consequences—Don Carlos Peete, M.D., University of Kansas School of Medicine.

Therapeutic Results in Endocrine Disease—E. H. Hashinger, M.D., University of Kansas School of Medicine.

Early and Late Care of the Soft Tissues of the Face—Earl C. Padgett, M.D., University of Kansas School of Medicine.

Organic Heart Disease—H. R. Wahl, M.D., Dean, University of Kansas School of Medicine, and George A. Walker, University of Kansas School of Medicine.

Photomicrography Exhibit—Kansas City Western Dental College.

Dental Exhibit—The Kansas State Board of Health, Dental Division.

Technical Exhibits

As all members know, no greater contribution is made to a state medical meeting than that furnished by the technical exhibitors. The financial assistance provided by the exhibitors in their purchase of exhibit space makes it possible to provide a type of meeting which would otherwise be difficult or impossible, and the display of new equipment and new products also affords an important scientific contribution. In return for this assistance, the exhibitors appreciate an opportunity to explain the services their companies are able to offer. Kansas has been fortunate in the number of exhibitors that it is able to obtain. It would like very much to have every exhibitor feel that he is fully paid for the considerable expense his exhibit represents. Members can, therefore, assist in fulfilling an obligation and in making possible even bigger and better Kansas meetings—by visiting and registering at each exhibit.

Booth 1

WESTINGHOUSE X-RAY COMPANY

Long Island, New York

"The Westinghouse X-Ray Company, Inc., will exhibit x-ray equipment and supplies. Its representatives will welcome you in their Booth No. 1."

* * *

Booth 2

WM. S. MERRILL COMPANY

Cincinnati, Ohio

"The Merrell exhibit will feature an improved vasodilator—Nitranitol—that has a more gradual and prolonged action than previously used hypotensors . . . for better management of essential hypertension. Representatives at the booth will be glad to discuss Nitranitol and other Merrell prescription specialties with interested physicians."

* * *

Booth 3

AMERICAN OPTICAL COMPANY

Topeka, Kansas

"Let us demonstrate Dr. A. Bielschowsky's 'After-Image Tester,' a diagnostic instrument that quickly determines prospectus of restoring binocular single vision in correcting strabismus cases. The R-C Slide for subjective refraction, the purpose of the slide is to ascertain quickly, easily, accurately and scientifically, that correction with which the patient will obtain maximum visual acuity with minimum accommodative effort. With the R-C Slide we can accomplish a complete subjective refraction without the patient ever reading any letters on the chart until the examination is completed."

* * *

Booth 4

A. S. ALOE COMPANY

St. Louis, Missouri

"The exhibit of the A. S. Aloe Company will feature many new and late developments in instruments, furniture, operative and treatment equipment. Messrs. Max M. Coe, Martin Hersh, and Tuck Walker will be on hand to demonstrate the Washington University Portable Obstetrical Table, the new Admiral and Commander Shortwave units, Cold-Quartz lamps, and the new Compax X-Ray, the sensation of the portable field. Don't miss the special miniature furniture and stainless steel display!"

* * *

Booth 5

MERCK & COMPANY, Inc.

Rahway, New Jersey

"The exhibit of Merck and Company, Inc., will include interesting information on the following chemotherapeutic agents: sulfapyridine in pneumococcal infections; sulfathiazole in pneumococcal pneumonia and staphylococcal in-

fections; Tryparsamide Merck for neurosyphilis; Vinethene, an inhalation anesthetic for short operative procedures; Pyridium for urogenital infections; Mecholyl for chronic ulcers, Raynaud's disease; and vitamins. The seventh edition of The Merck Manual is now off the press. Orders may be placed at the Merck booth, where Mr. S. A. Gaffney will be in charge."

* * *

Booth 6

M & R DIETETIC LABORATORIES, Inc.

Columbus, Ohio

"M & R Dietetic Laboratories, Inc., will display Similac and powdered SofKurd. Representatives will be glad to discuss the merits and suggested application of these products."

* * *

Booth 7

AMERICAN HOSPITAL SUPPLY CORPORATION

Chicago, Illinois

"If you're planning to visit The Kansas Medical Society convention be sure to save plenty of time to see what's waiting for you in Booth No. 7. The American Hospital Supply Corporation is showing an unusually interesting array of brand new specialties in surgical and hospital equipment. You're sure to come away with some new ideas about blood transfusion, blood banking, intravenous solutions, oxygen therapy, treatment of vascular diseases and many other important phases of your work. Remember you have an appointment at Booth No. 7."

* * *

Booth 8

ARCHER-TAYLOR DRUG COMPANY

Wichita, Kansas

"Our display planned for your annual session to be held in Topeka, May 13, 14 and 15 will constitute practically our entire line of pharmaceuticals, including pharmaceutical specialties of our manufacture."

* * *

Booth 9

JOHN WYETH & BROTHERS, Inc.

Philadelphia, Pennsylvania

"Physicians are cordially invited to visit Booth No. 9, where John Wyeth representatives will exhibit their pharmaceutical specialties."

* * *

Booth 12

COCA-COLA COMPANY

Atlanta, Georgia

"Coca-Cola will be served to the members and delegates with the compliments of The Coca-Cola Company."

Booth 14

LEDERLE LABORATORIES, Inc.
New York, New York

"Lederle Laboratories will this year have Booth 14—in charge of Messrs. O. W. Lee and G. D. Doyle. See them for information on the newer pharmaceuticals (Sulfonamides, etc.) Vi-Ferrin (Liver, Iron, Thiamin Chloride) and Vitamin B Complex. Allergic Extracts at this time featuring Hay Fever Pollens, Poison Ivy Extract, etc. Lederle has an interesting library of medical motion picture films available to interested groups, hospital staffs, etc. Ask at Booth 14."

* * *

Booth 16

GERRY OPTICAL COMPANY
Kansas City, Missouri

"The Gerry Optical Company will exhibit optical supplies and extend to you a cordial invitation to visit Booth No. 16."

* * *

Booth 17

COLE CHEMICAL COMPANY
St. Louis, Missouri

"The representatives of the Cole Chemical Company extend an invitation to all members of The Kansas Medical Society to visit its booth."

Technical Exhibitors

1. Westinghouse X-Ray Co., Inc., Long Island, N. Y.
2. William S. Merrell Company, Cincinnati, Ohio.
3. American Optical Company, Toledo
4. A. S. Aloe Company, St. Louis, Mo.
5. Merck & Company, Rahway, N. J.
6. M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
7. American Hospital Supply Corporation, Chicago, Ill.
8. Archer-Taylor Drug Company, Wichita.
9. John Wyeth & Brothers, Inc., Philadelphia, Pa.
12. Coca-Cola Company, Atlanta, Ga.
14. Lederle Laboratories, Inc., New York, N. Y.
16. Gerry Optical Company, Kansas City, Mo.
17. Cole Chemical Company, St. Louis, Mo.
18. The Borden Company, New York, N. Y.
19. Medical Protective Company, Fort Wayne, Ind.
20. Mid-West Surgical Supply Co., Inc., Wichita.
21. J. B. Lippincott Company, Philadelphia, Pa.
23. H. G. Fisher & Co., Chicago, Ill.
24. W. E. Isle Company, Kansas City, Mo.
25. The C. V. Mosby Co., St. Louis, Mo.
26. Parke, Davis & Company, Detroit, Mich.
27. Petrolagar Laboratories, Chicago, Ill.



Second Annual Session

28. Quinton-Duffens Optical Company, Topeka
30. Abbott Laboratories, North Chicago, Ill.
31. A. J. Griner Company, Kansas City, Mo.
32. Eli Lilly & Company, Indianapolis, In.
33. Greb X-Ray Corporation, Kansas City, Mo.
34. Cole Chemical Company, St. Louis, Mo.
35. Gerber Products Company, Fremont, Neb.
36. Zemmer Company, Pittsburg, Pa.
38. Geotze-Niemer, Topeka.
39. Riggs Optical Company, Kansas City, Mo.
40. Holland-Rantos Company, Inc., New York, N. Y.
41. Mead Johnson & Company, Evansville, Ind.
42. & 43. General Electric X-Ray Corp., Chicago, Ill.
44. Lea & Febiger, Publishers, Philadelphia, Pa.
45. The Mennen Company, Newark, N. J.
46. McIntosh Electric Corporation, Chicago, Ill.
48. C. B. Fleet Company, Inc., St. Louis, Mo.
49. E. R. Squibb & Sons, New York, N. Y.
52. Smith, Kline & French Laboratories, Philadelphia, Pa.
53. DeVilbiss Company, Toledo, Ohio.
54. Burroughs Wellcome & Co., Inc., New York, N. Y.

Booth 18

BORDEN COMPANY
New York, New York

"Visit Booth No. 18 to see infant foods made entirely from Board-of-Health-inspected milk and designed specifically for infant formulas. Biolac, the distinctive new liquid infant food, affords convenience, economy, and optimal nutrition; it is sterile and requires simply dilution with boiled water to make a complete formula. Preparation of the whole day's feedings is done in only fifteen minutes. Beta Lactose is nature's carbohydrate in an improved, readily soluble form. Dryco provides formula flexibility for every feeding problem. Also Klim, Merrell-Soule Products, and Irradiated Evaporated Milk."

* * *

Booth 19

THE MEDICAL PROTECTIVE COMPANY
Fort Wayne, Indiana

The Medical Protective Company's representative, thoroughly trained in professional liability underwriting, invites you to visit our exhibit booth. He is entirely familiar with the principles of the reciprocal rights and duties of a doctor and patient and with the circumstances peculiar to that relationship. He will be glad to explain how his company meets the exacting requirements of adequate liability protection, which are peculiar to the professional liability field."



SESSION WICHITA

Booth 20

MID-WEST SURGICAL SUPPLY COMPANY, Inc.
Wichita, Kansas

"Cy Jennings and Fay Martin will be in attendance in Booth No. 20."

* * *

Booth 21

J. B. LIPPINCOTT COMPANY
Philadelphia, Pennsylvania

"New Lippincott books of interest to every physician are Grollman's 'Essentials of Endocrinology' and Tobias' 'Essentials of Dermatology.' Leaman's 'Management of the Cardiac Patient,' today's sales leader, will be displayed, as will Thorek's three-volume 'Modern Surgical Technic.' New editions of Kracke's 'Diseases of the Blood and Atlas of Hematology' and Goldwait's 'Body Mechanics' will also be shown as well as the rest of the important Lippincott books."

* * *

Booth 23

H. G. FISHER & COMPANY
Chicago, Illinois

"The best way to look at an automobile, when you plan to buy a new one, is to look under the hood. There's where the real difference lies. To every visitor at the Topeka convention, accordingly, we give this special invitation: Look under the hood of the new Fisher model of apparatus shown! Fisher shockproof x-ray apparatus, short wave units, ultra violet and other generators are built to stand the very hardest day-by-day usage. Demand to be shown the real under-the-hood facts about Fisher models—Booth No. 23."

* * *

Booth 24

THE W. E. ISLE COMPANY
Kansas City, Missouri

"The W. E. Isle Company of Kansas City, Mo., will feature: Isle Artificial Limbs, awarded the seal of approval by the American College of Surgeons; a complete line of modern orthopaedic appliances, outstanding for excellent design and finished workmanship; Camp Anatomical Supports for men and women; Elastic hosiery, including seamless, hand loomed, and two-way stretch Lastex for comparison."

* * *

Booth 25

THE C. V. MOSBY COMPANY
St. Louis, Missouri

"Physicians and surgeons interested in the new developments in medicine and surgery are cordially invited to inspect the new Mosby publications which will be on display at Booth No. 25. Among these new volumes will be Willius-Keys 'Cardiac Classics'; Nygaard 'Hemorrhagic Diseases'; Crossen & Crossen 'Foreign Bodies Left in the Abdomen'; Volume III of Duke-Elder 'Textbook of Ophthalmology'; Snell 'Medicolegal Ophthalmology'; Rosenthal 'Diseases of the Digestive System'; Harris 'Clinical Pellagra' and Cleckley 'Mask of Sanitay.' There will also be new editions of Meakins 'Practice of Medicine'; Clendenning-Hashinger 'Methods of Treatment'; Bard 'MacLeod's Physiology in Modern Medicine'; and Sutton 'Introduction to Dermatology.'"

* * *

Booth 26

PARKE, DAVIS & COMPANY
Detroit, Michigan

"Featured in the Parke-Davis exhibit will be the sex hormones, Theelin and Theelol; antisyphilitic agents, such

as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various adrenalin chloride preparations."

* * *

Booth 27

PETROLAGAR LABORATORIES
Chicago, Illinois

"This year Booth No. 27 will be occupied by Petrolagar Laboratories, Inc., who offer, in addition to samples of the five types of Petrolagar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrolagar representative, Mr. L. M. Frisbie, to show you the Habit Time booklet. It is a welcome aid for teaching bowel regularity to your patients."

* * *

Booth 28

QUINTON-DUFFENS OPTICAL COMPANY
Topeka, Hutchinson, Salina

"Our exhibit will feature lenses, primarily, showing Univis and Panoptik construction and Soft-Lite in all available forms."

* * *

Booth 30

ABBOTT LABORATORIES
North Chicago, Illinois

"You are most heartily invited to stop here and discuss the newer specialties with the Abbott trained representatives in attendance. The wide assortment of products displayed in this exhibit merit your close attention and study and your questions are solicited. Large volume intravenous solutions, hypodermoclysis equipment, vitamins, arsenicals, barbiturates, including Pentothal Sodium, pollens and other research products are featured. Description of all the items being shown is prohibited by space, so! . . . Come in and see us!"

* * *

Booth 31

A. J. GRINER COMPANY
Kansas City, Missouri

"Laboratory instruments, glassware and equipment of interest to hospitals, physicians and clinical laboratories. We especially stress our instrument repair department, and any members having equipment of this sort needing repairs can consult the person at the exhibit booth and get the desired information."

* * *

Booth 32

ELI LILLY AND COMPANY
Indianapolis, Indiana

"Eli Lilly and Company will demonstrate the germicidal efficacy of 'Merthiolate' (Sodium Ethyl Mercuri Thio-salicylate, Lilly) and the compatibility of the antiseptic with body cells and fluids. Other new and useful products will be featured."

* * *

Booth 33

GREB X-RAY CORPORATION
Kansas City, Missouri

"The Greb X-Ray Corporation will exhibit equipment and specialties. Its representatives will be very happy to see you at Booth No. 33."

* * *

Booth 34

COLE CHEMICAL COMPANY
St. Louis, Missouri

"Cole Chemical Company again welcomes doctors to the 1941 Kansas Medical Meeting. Physicians are cordially invited to visit the exhibit of Cole's quality pharma-

ceuticals. Representatives, Messrs, Newlon and Sterns will gladly offer information in regard to the products displayed. Samples of Be-min (Cole) Thiamin Chloride Liquid (synthetic crystallin B₁) and Thy-Stric (Cole) will be available."

* * *

Booth 35

GERBER PRODUCTS COMPANY

Fremont, Michigan

"The complete line of Gerber Baby Foods will be on display-dry, pre-cooked cereal food, fifteen strained foods and ten junior foods. A new infant cereal, Strained Oatmeal, precooked, dried and flaked, will be shown for the first time. Booklets available for distribution to mothers or patients on special diets as well as professional literature will be sent to registrants, for examination."

* * *

Booth 36

THE ZEMMER COMPANY

Pittsburg, Pennsylvania

"The Zemmer Company extends to the Members of The Kansas Medical Society and their guests a cordial invitation to visit their exhibit where will be displayed a number of their leading pharmaceutical products. The exhibit will be in charge of Mr. Charles N. Lennox and their Kansas representative Mr. W. H. Alexander."

* * *

Booth 38

GOETZE-NIEMER

Topeka, Kansas

"As a host town exhibitor, the Goetze-Niemer exhibit will be devoted largely to the comforts of our many patrons, some of whom have dealt with us for nearly fifty years. All are cordially invited to our supply depot in the National Reserve Building, where complete lines of equipment and merchandise will be on display."

* * *

Booth 39

RIGGS OPTICAL COMPANY

Kansas City, Missouri

"Riggs Optical Company's display will feature the newest in eyewear in frames, mountings, and lenses as well as diagnostic instruments. Featured among the new mountings will be the Balcrest Rimway Ful Vue, Flexshu Numont and Loxit Numonts. Another feature of the display will be the most complete line of Orthogon corrected curve lenses, both single vision and bifocals in White, Ray-Ban and Soft-Lite. Ray-Ban sunglasses, preferred by airline pilots everywhere, will also be displayed."

* * *

Booth 40

HOLLAND-RANTOS COMPANY, Inc.

New York, New York

"Modern contraceptive technique and medically approved contraceptive specialties will be displayed at the booth of the Holland-Rantos Company. A wide variety of diaphragms including the Koromex and Hyva will be presented together with the Koromex Jelly and H-R Emulsion Cream as well as the Pelviform Model for patient instruction. Mr. Fox will be in charge of our booth and will be more than happy to demonstrate our products by means of a sixteen millimeter motion picture he will have with him."

* * *

Booth 41

MEAD JOHNSON & COMPANY

Evansville, Indiana

"'Servamus Fidem' means We Are Keeping the Faith. Almost every physician thinks of Mead Johnson & Com-

pany as the maker of Dextri-Maltose, Pablum, Oleum Percomorphum and other infant diet materials. But not all physicians are aware of the many helpful services this progressive company offers physicians. A visit to our booth will be time well spent."

* * *

Booths 42 & 43

GENERAL ELECTRIC X-RAY CORPORATION

Kansas City, Missouri

"The General Electric X-Ray Corporation and its Kansas representatives, Mr. Falk and Mr. Liscum will be pleased to have you visit our booths. If you want to see the latest and best in x-ray equipment, supplies, and physiotherapy equipment, our exhibit is the place to see it."

* * *

Booth 44

LEA & FEBIGER, PUBLISHERS

Philadelphia, Pennsylvania

"Lea and Febiger will exhibit among their new works Portis' 'Digestive Diseases,' Kraines' 'Psychoses,' Katz's 'Electrocardiography and Exercises,' Lewin's 'Foot and Ankle,' Ballenger's 'Manual,' Rony on 'Obesity and Leanness,' Packard, Hays and Blanchet on 'Artificial Pneumothorax' and Adair's 'Obstetrics and Gynecology.' New editions will be shown of many standard books including Joslin's 'Diabetes and Manual,' Holmes and Ruggles' 'Roentgenology,' Fishberg's 'Heart Failure,' Haden's 'Hematology,' Stimson's 'Contagious Diseases' and Comroe's 'Arthritis.'"

* * *

Booth 45

THE MENNEN COMPANY

Newark, New Jersey

"The Mennen Company will exhibit their two baby products—Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than ninety per cent of the hospitals that are important in maternity work. Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products."

* * *

Booth 46

McINTOSH ELECTRICAL CORPORATION

Chicago, Illinois

"In the McIntosh Electrical Corporation's exhibit space, Paul Read of Kansas City and Louis C. Fenneberg of Wichita, local representatives of the firm will greet old friends and customers and demonstrate the improved model Hogan Brevatherm, the Polysine Generator, the Sinustat and the McIntosh Portable Wall Plate. The McIntosh Corporation received a large defense order from the War Department for 254 Portable Wall Plates to be installed in various Army posts. Visiting physicians will be interested in this unit."

* * *

Booth 48

C. B. FLEET COMPANY, Inc.

St. Louis, Missouri

"For more than fifty years the medical profession has found Phospho-Soda (Fleet) and efficacious eliminant, having many desirable attributes of a medication of this type. For several generations physicians have found sodium phosphate a reliable and efficient medication to facilitate treatment of gall bladder and biliary disorders. Phospho-Soda (Fleet) is a combination of two U.S.P. sodium phosphates, enhancing the value of both and increasing the buffer action of these phosphates."

Booth 49

E. R. SQUIBB & SONS
New York, New York

"A number of new and interesting vitamin, glandular, biological, and chemotherapeutic specialties will be featured in the Squibb Exhibit in Booth No. 49. Well informed Squibb representatives will be on hand to welcome you and to furnish any information desired on the products displayed."

* * *

Booth 52

SMITH, KLINE & FRENCH LABORATORIES
Philadelphia, Pennsylvania

"The medical specialties of Smith, Kline & French Laboratories are displayed in a new exhibit which has been designed to put the products at your fingertips for you to see and handle. Mr. William M. Stewart will be on hand to answer questions and furnish any information about the products that you may desire."

* * *

Booth 53

DeVILBISS COMPANY
Toledo, Ohio

"The DeVilbiss Company has reserved space No. 53 for the 1941 convention of The Kansas Medical Society

which will be held at the Topeka Municipal Auditorium, Topeka, Kansas, May 12 to 15 inclusive. The most advanced line of instruments for scientific application of solutions to the nose and throat in office treatment or to prescribe for home use will be on display. Also included in the exhibit will be illustrations showing the superior coverage offered by the atomizer in the application of solutions to the nose and throat. These are based on x-ray research. Copies of the illustrations for reference may be secured from I. W. Smock, who will be in charge of the display."

* * *

Booth 54

BURROUGHS WELLCOME & COMPANY, Inc.
New York, New York

"Burroughs Wellcome and Company, (U. S. A.) Inc., New York (Booth No. 54) presents a representative group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession."

REGISTRATION

The constitution and by-laws of the Society provide that every physician must register before he shall be entitled to attend any of the events of the meeting. The only requirement for registration is the presentation of a 1941 membership card. Registration by any other means requires certification by the secretary of the county medical society of place of residence, or by an officer of the Society. The registration headquarters will be located at the entrance to the Topeka Municipal Auditorium, located at Quincy, between Seventh and Eighth Street, fronting on Eighth Street and the registration desk will be open from 8:00 A. M. to 6:00 P. M. each day. Tickets for all luncheons, dinners and the annual banquet may be obtained at the registration desk.

SHAWNEE COUNTY COMMITTEES

As host, the Shawnee County Medical Society has prepared the arrangements for the 82nd Annual Session. Serving as general co-chairman of the session are Dr. J. L. Lattimore and Dr. L. L. Saylor; Dr. W. H. Weidling is general-treasurer. Chairmen of the various committees are as follows: Program, Dr. O. R. Clark; Scientific Exhibits, Dr. C. B. Trees; Commercial Exhibits, Dr. L. A. Smith; Golf and Trap, Dr. E. H. Decker; Banquet-Entertainment, Dr. H. L. Kirkpatrick; Accommodations, Dr. L. E. Eckles; Arrangements, Dr. Guy Finney; and Publicity, Dr. H. L. Clark. The remaining members of the society have served on various committees.

ANNUAL BANQUET AND DANCE

Dr. Andre Baude, who holds degrees of doctor of medicine and doctor of dental surgery and who was formerly an officer in the medical corps of the French Army, will be the guest speaker at the annual banquet for members, their wives and guests. Dr. Baude was a participant in the battle of Dunkerque and in many of the other happenings of the recent invasion of France. He is an excellent speaker and brings to his listeners a vivid description of the present European War, of the events leading to the fall of France, and of his experiences and escape from that country. He is presently living at Independence. The banquet will be held at the Topeka High School Cafeteria on Wednesday, May 14 at 7:00 P. M. Dancing will be held at the Jayhawk Hotel Roof following the banquet.

GOLF AND TRAP SHOOTING

This year the Annual Golf Tournament of the Society will be held at the Topeka Country Club. This course has had watered fairways for two years, and the layout has been completely changed since the 1939 annual meeting in Topeka. Located about one mile from Topeka on highway 75, with entrance at Twenty-ninth and Lincoln Streets.

Both the course and the facilities of the club house are at the disposal of physicians during the day. Play may be started at 10:00 A. M. for the convenience of those who wish to participate in the Trap and Skeet Shooting. Most flights, however, will begin about 12:30 P. M. It will be necessary that the player declare himself on the first tee if he wants the round to apply on tournament play.

There will be a number of attractive trophies and prizes, both for the par-teasers and those who play golf for fun, awarded following the Annual Golf and Trap Shoot Banquet which will be held at 6:30 P. M. at the Topeka Country Club.

A new trophy has been presented for competition this year. The trophy which is being given by the Quinton-Duffens Optical Company



MEAD JOHNSON GOLF TROPHY



MEAD JOHNSON TRAP SHOOTING TROPHY

of Topeka is a challenge award in the form of a walnut plaque. It is to be given to the medalist of the tournament for possession for one year following the tournament. Upon any one winning the tournament three years (not necessarily in succession) it becomes his permanent possession.

SHOOTING TOURNAMENT

The Skeet and Trap Tournament will be held on Monday, May 12, at the Isaac Walton Gun Club which is located three miles east and one-half mile south, on either Sixth or Tenth Street, (the two streets converge at the edge of town). There will be a sign at the corner where you should turn south. We will have no place for pistol or rifle shooting.

The traps will be open after 10:00 A. M. for those who wish to do a lot of shooting. The competitive shooting will begin at 1:30 P. M. There will be prizes for the mediocre shooters as well as for the "hot-shots." Handicap matches will be held in addition to the matches for the "Grand-Prize."

Bring your own guns, although you will probably be able to borrow one if necessary. Shells and targets may be bought at the grounds, although if you wish to shoot other than a 12-gauge gun please notify Harry J. Davis, M.D., Chairman, so that shells will be on the grounds for you.

KANSAS OBSTETRICAL & GYNECOLOGICAL SOCIETY

On Tuesday, May 13, at the Jayhawk Hotel, Green Room, in Topeka, will be held the first annual banquet of the Kansas Obstetrical and Gynecological Society. This Society is newly organized and is composed of members of The Kansas Medical Society who are interested in obstetrics and gynecology. This organization is being formed solely for the purpose of bringing to Kansas physicians the latest and most up-to-date information regarding obstetrical and gynecological subjects. This is to be accomplished through post-graduate sessions and clinics held in various sections of the state.



QUINTON-DUFFENS GOLF TROPHY

Anyone in the state wishing to have his name entered in the charter membership roll is asked only to pay the required \$3.00 dues and attend the annual banquet. \$3.00 includes dues and banquet ticket. Tickets will be available at the registration desk for those who have paid their annual dues. For those who have not paid their dues, they may do so at the registration desk and receive receipt for the same as well as their ticket to dinner.

Ray A. West, M.D., President.

THE KANSAS MEDICAL ASSISTANTS' SOCIETY

Approximately two hundred doctor's assistants, who attended the one-day meeting held in conjunction with the Wichita annual session have organized locally and state-wide as the Kansas Medical Assistants Society and the second annual meeting of this organization will be held in Topeka on May 11 and 12.

The Kansas organization, which was the first of its kind in the country, has attracted much attention and many requests have been received concerning the plan of organization, the procedures and the possibilities for other states, who hope to organize in a similar manner.

It is suggested that doctors sponsor the payment of the registration fee and the expenses of their assistants to this meeting. The small expense represented thereby will be repaid many times through the information and assistance his assistant receives in the handling of office problems and procedures.

The Topeka Physician's Assistants will be hostesses this year to the other organizations of the state and the attendance is expected to exceed last years excellent attendance of 325. A well rounded social and educational program has been planned.

KANSAS MEDICAL ASSISTANTS SOCIETY

SUNDAY AND MONDAY, MAY 11, 12

An invitation to attend the sessions of the Kansas Medical Assistants Society is extended to any person employed in the office of a member of The Kansas Medical Society. This includes secretaries, nurses and technicians.

SUNDAY, MAY 11

- 1:30 P. M. REGISTRATION
Kansan Hotel—Convention Hall
- 3:00 P. M. BUSINESS SESSION—Presentation of proposed State Constitution—By-Laws.
Mrs. Margaret MacKenzie, Wichita, Presiding
- 4:30 P. M. Uniform Fashion Show and Tea
Kansan Hotel—Roof Garden

MONDAY, MAY 12

- 8:30 A. M. REGISTRATION
Municipal Auditorium—Assembly Room
- 9:15 A. M. ADDRESS OF WELCOME
Miss Joyce Ryerson, Topeka
- RESPONSE TO ADDRESS OF WELCOME
Miss Myrtle Thompson, Manhattan
- 9:30 A. M. RELATION OF THE ASSISTANT TO THE LABORATORY
John L. Lattimore, M.D., Topeka
Dr. Lattimore is head of the Lattimore Laboratory in Topeka and has laboratories in several other communities. He is well acquainted with this subject, and can provide you with much helpful information.
- 10:30 A. M. COLLECTIONS, MEDICAL FRAUDS AND RACKETS
Mr. John Harvey, Lyon County Credit Bureau, Emporia
Mr. Harvey is also a forceful speaker and is interested in collections from the physicians standpoint.
- 12:00 A. M. LUNCHEON
Kansan Hotel—Roof Garden
Mrs. Marjorie Euler, Topeka, Presiding
- SOME FINANCIAL CONSIDERATIONS FOR SALARIED PEOPLE
Mr. Laird Dean, Topeka
Mr. Dean is president of the Merchants National Bank of Topeka, and is a man thoroughly familiar with his subject.
- 2:00 P. M. HIGHLIGHTS OF TWENTY-FIVE YEARS OF SERVICE—
Municipal Auditorium—Assembly Room
Mrs. Marjorie Euler, Topeka
This paper was presented to the Michigan Medical Assistants Association last fall in Detroit and was well received. Those who have had an opportunity to read it praise it highly.
- 2:45 P. M. ELECTION OF STATE OFFICERS
Mrs. Margaret MacKenzie, Wichita, Presiding
- 3:15 P. M. STATE PRESIDENT'S ADDRESS
Mrs. Margaret MacKenzie, Wichita
Induction of new officers

President's Page

To the Members of The Kansas Medical Society:

Once again I want to thank you for your kindness and consideration to me. Your cooperation throughout the period of my stewardship of the Presidency has been most excellent and it has been a constant source of stimulation and inspiration to me. Needless to say, it has been a pleasure to work with and for you.

Any progress made during this period of time has been largely due to the timely suggestions and advice of our officers, council members and committee men, all of whom have worked hard to raise our standards of practice. The encouragement they have given to our entire membership has been very helpful.

Serious medical preparedness problems have arisen during the past year and the immediate future holds additional problems of like character which will affect the lives and the practice of our entire membership. As men of Kansas medicine may we be vouchsafed the mental, moral and physical stamina to face these problems with a degree of fortitude befitting our profession.

Economic, social and legislative problems are awaiting us. We must gird ourselves to meet them. Fortunately the fires are burning in every county medical society in Kansas, our members have their eyes turned to the future and under the splendid leadership of Dr. C. D. Blake, our incoming President, for whom I bespeak your continued cooperation, we as men of Kansas medicine will meet the challenge of the future. Dr. Blake, we salute you—

Sincerely,

Lawrence L. Loveland M.D.

President, The Kansas Medical Society.

EDITORIAL

THE RETIRING PRESIDENT

To Dr. Forrest L. Loveland, the President of the Society for 1940-41, should go much credit for a job well done. His year as President not only included the usual numerous responsibilities and duties incidental to that office, but also two other major undertakings. Both of these were successfully completed and either of them would have been a very satisfactory accomplishment in any one year, viz, the preparation of plans and procedures for an extensive medical preparedness program and the defense in the legislature of certain aims and ideals which are of vital importance to the future of good health and good medical practice in Kansas.

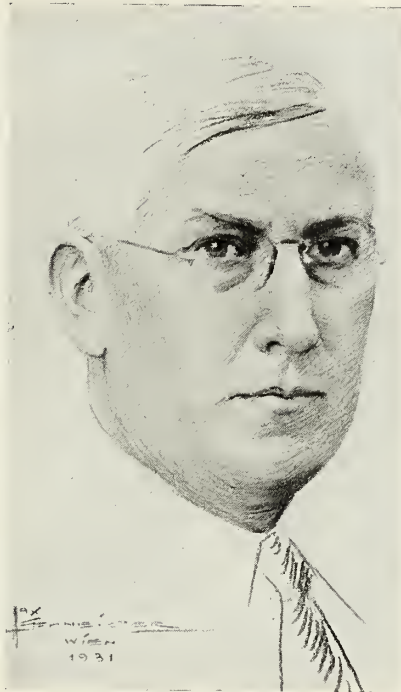
Those acquainted with Dr. Loveland's activities during the past year know that he donated almost his full time in the interest of the Society during that time; that he took part in numerous conferences, committee meetings and discussions on matters of medical interest; that he accepted all medical society and other invitations to speak which he received; that he traveled the state extensively in behalf of Society matters, that he maintained close personal liaison relationship with all allied organizations and agencies interested in public health and medicine; and that to all practical purposes he gave up the practice of medicine and a sizeable portion of his time with his family to serve his profession. The Society central office will testify that Dr. Loveland spent at least several hours each working day in that office and very frequently many more hours there and elsewhere in discussion of and work upon medical problems and questions. During the legislature he could be found each day, at

any hour, at the sessions, and each night, at any hour, at the Society headquarters.

Few people know, however, that he gave up one of his most cherished accomplishments in life to make the above results possible. For twenty years, Dr. Loveland has been the president and one of the leading influences of the City of Topeka Board of Health. Its efficient indigent clinic and its other valuable services have been developed largely through his efforts. He resigned his position with that Board early in the year, to make it possible to give his time to the Society.

The following record of accomplishments during the past year show clearly that the Society has made substantial progress under the guidance of Dr. Loveland, and that he has completely justified the confidence the membership placed in him when it elected him to the presidency.

The present plans for medical preparedness represent one of the largest undertakings which has ever been assigned to medical organization, and the Society, like most other medical organizations, has spent a sizeable amount of time in that interest during the past year. Kansas plans and procedures in this connection have been well and carefully prepared, and the Kansas profession takes pride in the efficiency of its induction board as-



FORREST L. LOVELAND, M.D.

sistance, in the prompt and high ratio of its return of the American Medical Association questionnaires, in the low percentage of physical examination rejection of Kansas Selective Service registrants and in the fact that the Army has appraised the Kansas physical examination program as one of the best in the country. The results obtained to date indicate clearly the presence of careful and efficient planning and of good organization and leadership.

The question of illegal practice of medicine and surgery also continued as one of the major problems

during the year, and to Dr. Loveland fell the responsibility of making many difficult and important decisions on this subject. The advent of several additional favorable court decisions and the willingness of the legislature to uphold the present high standards of medical practice have materially strengthened the opportunity to provide the people of Kansas with competent and capable medical service.

Several other developments of interest occurred in the recent session of the legislature. The Kansas State Board of Health was provided with additional funds and facilities through which its services can be extended and improved; a group hospitalization act was passed which will enable Kansas hospitals to engage in interesting experiments in this field of insurance; certain social welfare laws of interest to the profession were adopted; the University of Kansas School of Medicine was provided with additional funds through which its tuberculosis facilities can be improved, and for the extension of other projects and services; a resolution was approved by the Senate requesting the Kansas Legislative Research Council to study the need for additional tuberculosis sanatoria in the state; and two naturopathic bills of broad importance and a chiropractic measure requiring the mandatory payment of association dues by chiropractors were killed.

Substantial progress was made during the year on the subject of indigent medical care. Through the interest and assistance of the Kansas State Board of Social Welfare a plan was announced wherein it is believed the county medical societies will find it easier to provide complete medical service for indigent persons.

Post-graduate activity was also continued as a major project. State-wide courses were provided on the subjects of cancer, heart disease and tuberculosis, and The Kansas State Obstetrical and Gynecological Society was organized in Wichita in March with forty members, for the furtherance of post-graduate study on those subjects.

The Society assisted in various Kansas State Board of Health programs including the extension of the pneumonia program for indigent persons, the establishment of full-time health units in several additional counties, the provision of incubators in a considerable number of counties, the venereal disease

program and the maternal and child welfare programs of that organization.

Numerous lay educational activities were conducted. The Kansas Medical Auxiliary assisted materially in this regard and the Committee on Control of Cancer continued its extensive cancer educational program in conjunction with the Women's Field Army and the Kansas Federation of Women's Clubs.

The Committee on Allied Groups continued its provision of assistance to groups affiliated with the profession. The Committee on Auxiliary assisted materially in the furtherance of the Kansas Medical Auxiliary program. The Defense Board has helped in many ways in handling the important problem of malpractice. The Committee on Constitution and Rules prepared recommendations on needed changes in the Constitution and By-Laws of the Society and provided several new methods for improvement of the proceedings of the House of Delegates. The Committee on Endowment cooperated closely with the Endowment Association of the University of Kansas and continued plans for the expansion of endowed medical research. The Committee on Conservation of Eyesight assisted the Division of the Blind of the Kansas State Board of Social Welfare in many ways and participated in numerous programs for the reduction of blindness and impaired eyesight. The Committee on the Study of Heart Disease sponsored their second annual post-graduate course, and completed recommendations on ways and means of standardizing the reporting of heart disease morbidity and mortality. The Committee on Hospital Survey continued to serve in a close liaison capacity with the Kansas State Hospital Association. The Committee on Maternal Welfare presented recommendations on this subject to the profession and to Kansas hospitals and organized the Kansas State Obstetrical and Gynecological Society. The Committee on Medical Economics was active in studies of indigent medical care, medical service plans, group hospital plans, and the publication of like material of importance in this field in the Journal. The Committee on Medical History commenced activity toward the compilation of a medical history of Kansas. The Committee on Pharmacy continued its function as a liaison agency with the Kansas State Pharmaceutical Association. The Committee on Public

Health and Education made additional recommendations toward the establishment of an amply staffed and equipped division of public health education in the Kansas State Board of Health. The Committee on Schools of Medicine engaged in programs for the improvement of and assistance to the University of Kansas School of Medicine. The Committee on Scientific Work assisted in various ways in furthering the interest of the Kansas profession on that subject. The Committee on Stormont Medical Library in cooperation with the Journal added fifty-four new volumes of medical works to the stocks of the library and reviewed the possibilities of adding several periodicals to those already received by the library, as well as consideration of more general use of the library facilities for the Kansas profession. The Committee on Locations has assisted in many ways in supplying physicians in needed areas. The Committee on Child Welfare assisted materially on the survey of respirators available in the state during the recent epidemic of poliomyelitis and plans were made for a post-graduate course in pediatrics to be held in the near future. The Committee on Control of Tuberculosis was active in the study of the Kansas silicosis problem in efforts to obtain additional Kansas sanatoria facilities and in numerous other programs for the prevention and control of tuberculosis. The Committee on Control of Venereal Disease provided further assistance in the Kansas venereal disease problem.

Probably Dr. Loveland is very glad that his year as President is completed. The duties and responsibilities incidental to the position have grown to the place that the job is indeed a very strenuous and difficult one. He can, however, relinquish his gavel with the feeling that every doctor in Kansas sincerely appreciates the work he performed and with

the further feeling that he has well qualified himself to take his place in the long line of his distinguished and capable predecessors in office.

The Society salutes him for a job well done.

THE NEW PRESIDENT

The Kansas Medical Society takes great pleasure in welcoming Dr. Clyde D. Blake of Hays as its President for 1941-42.

Dr. Blake's term of office will be an important one. He will be confronted with many problems pertaining to medical preparedness, to the furnishing of medical services for communities whose physicians are called to active duty in the military forces, to numerous public health and economic questions, to the continuation of high standards of medical practice and to the numerous other matters incidental to the office of the President.

However, by reason of Dr. Blake's excellent ability as a physician, his general capability, his wide experience in organization work and his familiarity with Society work through his services as Councilor for two terms, as Vice-President during 1939-40 and in many other capacities, he is well equipped to assume the responsibilities of his position.



CLYDE D. BLAKE, M.D.

Dr. Blake was born in 1878. He obtained his medical degree from the Kansas Medical College in 1903. He was licensed to practice in Kansas in 1903 and has practiced in the state since that time. In addition to his membership in the American Medical Association, the Society and the Central Kansas Medical Society, he is a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Radiological Society of North America and other organizations.

The Kansas medical profession welcomes Dr. Blake as its President and pledges to him its full assistance and cooperation.

82nd ANNUAL SESSION

The members of the Shawnee County Medical Society invite your attendance at the Society's 82nd Annual Session. The annual meetings of the Society have for years ranked high in excellence and attendance and it is believed that this year will be no exception.

The scientific program will present some of the best informed physicians and surgeons in the country and particular effort has been made to choose speakers of interest to both the general practitioner and the specialist. The scientific and technical exhibits will be extensive in scope, and replete with modern medical information. The round table luncheons will be conducted upon a discussion basis with the guest speakers in attendance. The meetings of the House of Delegates are scheduled so that they will in no way conflict with the scientific program. An examination of the program, published in this issue of the Journal, will display the care which has been used in the selection of speakers and in the planning of the other events of the meeting.

Credit should also be given to two members of the Committee on Arrangements who have in the last few days been called into military service and who therefore will be unable to attend the sessions they so carefully arranged for your entertainment and education.

Most all events of past annual sessions have been included in this years program and meetings of two new organizations—the Kansas Heart Association and the Kansas Obstetrical and Gynecological Society have been added. The day for physician's secretaries, inaugurated at the last annual session in Wichita, will again be presented. The latter organization now has some two hundred members throughout the state and is an accredited organization of secretaries, nurses, technicians and physicians assistants under the name of The Kansas Medical Assistants Society.

Topeka is conveniently located; its hotel facilities are entirely adequate; its new auditorium which will house the meetings and exhibits, is one of the best in the country. If you have not already done so, make plans today to attend the Topeka meeting from May 12 to May 15.

INSTRUMENTS FOR BRITAIN

The Committee for British War Relief has requested that physicians contribute unused or old instruments to Great Britain. If members will bring any instruments or other equipment which they would be willing to donate for this purpose with them to the state meeting, the Society will see that they are forwarded to the committee. Any equipment may be left at the registration desk.

OFFICIAL PROCEEDINGS

FOREWORD TO DELEGATES

Since the agenda of the House of Delegates has increased appreciably during recent years, an attempt will again be made to save the time required for the reading of reports by publishing in the Journal as many of these as possible.

All of the following reports will be discussed and presented for adoption but since they will not be read all delegates are requested to become familiar with them in advance of the meeting.

The following report was presented by John M. Porter, M.D., Secretary of The Kansas Medical Society:

TO: THE HOUSE OF DELEGATES:

As predicted a year ago, your constitutional secretary spent the year 1940-1941 in more or less of a rut. Checks were counter-signed as requested, meetings of the council attended regularly and the activities of the Committee on Scientific Work, of which the secretary is chairman, duly supervised. Through frequent trips to Topeka, attendance at several county meetings over the state, reading copies of all correspondence sent from the central office, etc., close contact was maintained with the Society's business. Cooperation, as usual, was excellent.

The writer still feels that the best interests of the Society would be served by abandoning any precedent of re-electing officers with the exception of the time-honored one of treasurer. With the executive secretary and central office caring for practically all of the routine demands on the secretary there is almost no advantage in having an experienced member continue in that position year after year. As it stands, the secretary is practically a member-at-large of the council and since many members of that body continue in office the value of new blood would probably offset the advantage of experience.

Your executive secretary is reporting on membership and other detailed matters. The retiring president will acquaint you with any activities of the Society you have not been familiar with. Nothing unusual

has occurred in the duties of the secretary. As a matter of fact, defense efforts and interest in legislative activities took precedence over nearly everything during the past year. Even the Secretaries' and Editors' Conference held annually in Chicago was postponed this year.

Much miscellaneous correspondence was carried out during the year. Your secretary made talks on various topics related to both scientific medicine and the organization phases to several women's groups allied to the Medical Auxiliary, the Women's Field Army for Control of Cancer, etc., and to meetings of the Pratt, Ford, Clay, Saline and Washington county societies. An excellent lunch meeting of the county secretaries was held at the Wichita meeting and plans are under way to repeat this at the Topeka meeting this year with, if possible, the same amount of enthusiasm and cooperation. Because of defense and legislative activities, a suggestion made at the last annual meeting of the county secretaries that additional meetings be held throughout the year, was not carried out. It is hoped this can be arranged for the oncoming year with definite plans to be made at the conference in Topeka.

Your constitutional secretary has enjoyed his second year of service immensely, and his recommendations that he be not re-elected are in no wise to be construed as a failure to enjoy the privilege of holding this office or of being unwilling to act again in this or any other capacity for the State Society. The Society, however, would doubtless benefit by passing this job on to a new man each year.

Respectfully submitted,
J. M. Porter, M.D.,
Secretary.

The following is the report of the Councilor of the First District:

TO: THE HOUSE OF DELEGATES:

The Councilor of the First District has only words of praise for the fine cooperation received from the medical profession. The smaller societies have held quarterly meetings; and the larger societies monthly meetings. Ninety per cent of the doctors of medicine are members. There have been many good scientific meetings held in this district in the past year.

Respectfully submitted,
J. W. Randell, M.D.,
Councilor, First District.

The following is the report of the Councilor of the Second District:

TO: THE HOUSE OF DELEGATES:

The work in the Second Councilor District this year has been centered on coordinating the activities of the county societies to produce the greatest efficiency in matters pertaining to military preparedness and medical legislation.

Visits were made to each of the county societies, and special meetings were held at which time information on such matters, was imparted to the officers and representatives of the societies.

The work put forth by each member to solve the problems arising throughout the year, has resulted in a better understanding of the virtues of cooperative ef-

fort in matters of mutual interest to the whole Society.

Respectfully submitted,
O. W. Davidson, M.D.,
Councilor, Second District.

The following is the report of the Councilor of the Third District:

TO: THE HOUSE OF DELEGATES:

As Councilor for the Third District, I wish to report that everything has been going with 100 per cent cooperation of the doctors in my district.

Respectfully submitted,
L. D. Johnson, M.D.,
Councilor, Third District.

The following is the report of the Councilor of the Fourth District:

TO: THE HOUSE OF DELEGATES:

This district has had an unusually successful year. Each county in the district now has its own individual county society, functioning both from a scientific standpoint as well as from a business viewpoint.

Each society has cooperated in every request and I wish to take this opportunity of thanking the officers of each individual society.

Respectfully submitted,
J. L. Lattimore, M.D.,
Councilor, Fourth District.

The following is the report of the Councilor of the Fifth District:

TO: THE HOUSE OF DELEGATES:

Your councilor from the Fifth District begs leave to report that all the counties in this district are organized and things are running smoothly in all the county societies.

Respectfully submitted,
M. Trueheart, M.D.,
Councilor, Fifth District.

The following is the report of the Councilor of the Sixth District:

TO: THE HOUSE OF DELEGATES:

During the past year the Societies of the Sixth District have been very active and have had exceptionally good meetings. The officers have been very cooperative with the local and state Society in every way. We are happy to report a 100 per cent cooperation on each and every matter that we have called to their attention and everything has progressed in a very satisfactory manner.

Respectfully submitted,
W. P. Callahan, M.D.,
Councilor, Sixth District.

The following is the report of the Councilor of the Seventh District:

TO: THE HOUSE OF DELEGATES:

Republic, Mitchell, Cloud, Washington, Jewell, Riley and Clay counties all report good organizations which have held regular meetings throughout the year. All report good memberships.

During the past year Washington County Medical Society in cooperation with the Kansas State Board of Health and the Washington county commissioners,

immunized four hundred and fifty-two children against diphtheria. Jewell County is beginning its second year under the Farm Security Administration plan, which seems to be working very satisfactorily for them. Riley County honored Dr. J. D. Colt, Sr., Dr. W. H. Clarkson and Dr. W. M. Reitzel for forty years of faithful service at a meeting especially designed for this purpose. A full time county health unit under the Kansas State Board of Health was also approved by the Society. Clay County Medical Society in cooperation with other local organizations sponsored a crippled children's clinic.

I am happy to report that the Seventh District of The Kansas Medical Society is well organized and functioning smoothly.

Respectfully submitted,
F. R. Croson, M.D.,
Councilor, Seventh District.

The following is the report of the Councilor of the Eighth District:

TO: THE HOUSE OF DELEGATES:

The work of the Councilor of this district has been made very easy during the past year because of the fine spirit of cooperation which has prevailed in every county. Each time a matter of importance has needed attention there has been such a ready response that I hereby express my thanks to all of those who have been so helpful.

It is not my plan nor desire to dwell upon the record of the past year since that is now history which speaks for itself and has little interest except as it might point toward future improvement. In general, it seems to me that there have been fewer mistakes during the past year than have occurred in any previous year. This, I think, is due to the fact that our general membership has been better informed and, knowing what to do, each member has done his bit.

Now what of the future? It is to be hoped that there will be the same free spirit of criticism as there has been in the past. May it also become more and more of the constructive type because it is the certain conviction of this Councilor that the policies of our organization should be, as far as possible, the crystallization of opinion of as many minds as will think positively upon our problems.

We need to view rationally future contract practice and to decide on methods of management. In the American way of life the free choice of a physician on the part of the patient has been a fundamental right and one which we believe should be more scrupulously preserved. Contracts between individual members and industrial or insurance companies endanger the above principle. This could be avoided and price cutting eliminated if, in the future, all such arrangements were made between all members of the county societies in that locality and the industrial concern. At least county society approval of future individual contracts would raise this procedure out of the price-cutting mire into which it has sometimes fallen.

There are enough infractions against the medical practice act, which result in improper care of the sick or injured, to merit our attention in the matter of acquisition of evidence. This seems a two-fold challenge; first, that we work together to render efficient, scientific service which will be as far above criticism as possible; second, that we be certain about facts of

illegal practice so that we can place them in the proper hands.

Finally, may we repeat that constructive criticism is always welcome, new ideas for increased efficiency of our organization sought, and thanks to all who have helped.

Respectfully submitted,
L. S. Nelson, M.D.,
Councilor, Eighth District.

The following is the report submitted by the Councilor of the Ninth District:

TO: THE HOUSE OF DELEGATES:

The medical society of our district has had a very good year. The doctors in this district have shown much interest in legislative matters and have cooperated very whole-heartedly in contacting their representatives in the interest of maintaining high standards of medical care for the people of Kansas.

Generally speaking, the Farm Security Administration plan for medical care has not been satisfactory, either to the doctor or to the patient. A few doctors in our district have refused to continue for the second year.

During the year we lost Dr. Hugo E. Nelson of Sharon Springs by death and a few men have moved out of the district.

Respectfully submitted,
Haddon Peck, M.D.,
Councilor, Ninth District.

The following is the report submitted by the Councilor of the Tenth District:

TO: THE HOUSE OF DELEGATES:

Your councilor owes a debt of gratitude to President-elect, Dr. C. D. Blake, who so kindly and efficiently continued his work as Councilor until such time as I was able to assume my duties.

This district has been very active in county and district meetings and especially in backing up the state officers by giving every assistance. The members are very cooperative and, I think, a feeling of good fellowship prevails.

The outlook for the coming year is excellent and we hope to continue as in the past.

I wish to thank all those who have assisted me in my duties.

Respectfully submitted,
Otto A. Hennerich, M.D.,
Councilor, Tenth District.

The following is the report of the Councilor of the Eleventh District:

TO: THE HOUSE OF DELEGATES:

I am happy to report that all physicians in the eleventh district have given their full cooperation and support during the past year.

Respectfully submitted,
A. C. Armitage, M.D.,
Councilor, Eleventh District.

The following is the report of the Councilor of the Twelfth District:

TO: THE HOUSE OF DELEGATES:

The past year has gone by with no unusual happenings. Our doctors are busy and apparently satisfied

with their niche in the country and in life.

One death has occurred, Dr. F. B. Edwards, formerly of Garden City but more recently of Ft. Dodge.

It has been voted to continue the Farm Security Administration medical plan another year with a broader service and an increased payment per family.

Three of our members are serving their year's training in the army: Dr. D. J. Wilson of Tribune, Dr. H. C. Sartorius of Garden City, and Dr. R. E. Speirs of Dodge City.

There are several towns in this district without physicians. However, with the distribution of hospitals and with our good roads, we do not feel there is lack of good medical attention.

Respectfully submitted,

Geo. O. Speirs, M.D.,
Councillor, Twelfth District.

The following report was presented by C. Omer West, M.D., Chairman of the Committee on Auxiliary:

TO: THE HOUSE OF DELEGATES:

The Auxiliary advisory committee of The Kansas Medical Society has the pleasure to report that the Auxiliary has extended its activities during the past year and has fostered the following activities:

1. They have increased their membership and also extended their organization into several new counties.

2. They have spent some time in trying to interest county medical societies in Auxiliary programs and we are happy to report that they have been successful.

3. The public relation teas which were introduced into the Auxiliary program last year, will be held again this spring. The Committee feels that there are unlimited possibilities in these teas where medical education is presented to active lay citizens of the various localities.

4. The Auxiliary has been active in the Kansas Women's Field Army which is an admirable work.

5. The Auxiliary has been active in furthering lay education and preventive medicine programs; a project which will assist the public health program of preventive medicine and has already promoted and encouraged vaccinations in various communities.

6. During the past year a marked increase has been made in the distribution of the Hygeia magazine throughout the state. The State Board of Health has been of great assistance in this work.

There are many other fields that the Auxiliary could enter but it is thought best that they take on fewer projects and work them well, rather than try to cover too large a field.

The committee is quite proud of the work that the Auxiliary has done during the past year under the fine leadership of Mrs. T. D. Blasdel, president, and her active board. They have been most cooperative and through their combined work, the Auxiliary in the State of Kansas has gone forward.

The following report was presented by Howard E. Snyder, M.D., Chairman of the Committee on Control of Cancer:

TO: THE HOUSE OF DELEGATES:

Your Committee on the Control of Cancer wishes to report another very successful year. The program for the year was formulated at our first meeting on

June 5, 1940. One other called meeting was held, and many impromptu meetings between individual members of the committee have occurred throughout the year.

The committee feels that the importance of the programs for the lay public can not be over emphasized. Cooperation with the Women's Field Army of the American Society for the Control of Cancer has given us access to a large cross-section of the public of Kansas in the last few years. This year many more public meetings have been held than in any previous year. At the start of the year it was decided to emphasize the subject of cancer of the breast and cancer of the uterus in public meetings. Film strips on these two subjects were made available for use in public meetings. The sound motion picture film "Choose to Live," was made available whenever possible for these meetings. Speakers for meetings have been furnished by the county medical societies from their own members or from guest speakers, or the speakers have been furnished by the Committee on Control of Cancer when the request has come through the county medical society. This year more than any previous year, has shown an increase in the interest of the doctors throughout the state in these public meetings devoted to cancer. Many medical societies and many individuals have been very cooperative in planning these programs. There have been some few complaints from Women's Field Army workers concerning the cooperation of the local physicians, but these complaints have been few and far between. A mimeographed copy of a speech was sent to each county medical society for use of its members in these public meetings. Other material was available through the loan packet service available at the central office of the State Society.

In addition to the program of lay education, the program of professional education has been continued. The cancer section of the Journal has been continued. It was recommended at the beginning of the year in a bulletin sent to the officers of the county medical societies, that each society devote at least one meeting to the subject of cancer during the year. The post-graduate course on cancer was given for the sixth consecutive year. George C. Pack, M.D., of New York, a pre-eminent authority on the subject gave a most interesting and educational lecture course on the subject of cancer of the breast and cancer of the stomach. These post-graduate meetings were not as well attended as they should have been. The committee hopes that greater emphasis may be made upon the importance of every physician improving his knowledge of the cancer subject.

The Committee on the Control of Cancer is preparing an exhibit entitled "Cancer Control in Kansas" which will be shown in the scientific exhibit section of the American Medical Association meeting in Cleveland this June.

The committee chairman wishes to thank the members of the committee and all of the members of The Kansas Medical Society who have given generously of their time to the cancer control program in Kansas this year.

The following report was presented by Arthur W. Fegty, M.D., Chairman of the Committee on Constitution and Rules:

TO: THE HOUSE OF DELEGATES:

Your committee has had no called meetings but has functioned by correspondence. We believe that the plans tried at the 1940 meeting for conserving time and expediting the work of the House of Delegates were successful, should be tried again at the 1941 meeting, and if they continue to prove advantageous, adequate changes in the By-Laws—Chapter XI, Committees, Sections 1, 2 and 3 and Chapter V, House of Delegates, Section 7, Official order of business—should be introduced at the next annual session.

These were: 1. Registration of all delegates and official members of the House of Delegates at the entrance to the meeting place, the issuance of badges, and the registration of all visitors.

2. Appointment by the President of a special reference committee on reports of Officers, Councilors, Defense Board and Editorial Board to meet prior to first meeting, condense same and render report to the first meeting.

3. Appointment by the President of a special reference committee on reports of all standing committees and any resolutions offered by component societies, to meet prior to first meeting, summarize same and make report to the first meeting of the House of Delegates. Preparation of a booklet containing the original charter, the Constitution and By-Laws as amended to date, and the Code of Ethics of the American Medical Association is now being made, and should be ready for distribution to the membership at an early date.

There are no amendments to be presented at this session.

The following was presented by L. S. Nelson, M.D., Chairman of the Defense Board:

TO: THE HOUSE OF DELEGATES: . .

Again the Defense Board wishes to report a year in which defense against malpractice suits have been few and during the last six months no new cases have been filed through this organization. This speaks well for the scientific acumen of our members as well as for the excellent manner in which the general defense program has been built.

Occasionally a member allows his dues to lapse and then finds himself in danger of being sued. The Society Constitution and By-Laws is very specific on this point and your Defense Board can only provide defense for members whose dues are paid.

The Board feels that one reason for our good record in the last few years has been the general attitude of the membership at large concerning patients who are of questionable character. Remarks to such people concerning colleagues are most dangerous and in this we hope for continued care.

May we suggest that doctors of medicine appearing as witnesses in court are often subjected to peculiar questioning and may find themselves pitted against each other quite inadvertently. Medical men who are called as witnesses should avoid dogmatic statements. A further suggestion concerning testimony may be apropos. It is of first importance, since the witness is sworn to tell the truth, that he understand the question asked by the attorney. Care should be exercised in replying to multiple questions too complex for simple, short answers. Ask the attorney to simplify the question. If the witness knows the answer, it should

be stated as clearly and briefly as possible. Should he not know the answer, it is far better to so state than to make ambiguous remarks. Above all, ones temper should be at all times under complete control.

Your Defense Board feels keenly a double responsibility. The first to defend legitimate members against suits of malpractice, and secondly, in the interest of economy, good business, and intelligence, to prevent suits as far as it is humanly possible. For these reasons we plead for continued exercise of the Golden Rule in all matters where patient-physician relationship is concerned. Just do unto others as you would have others do unto you and our record may yet improve.

The following report was presented by H. L. Chambers, M.D., Chairman of the Committee on Endowment:

TO: THE HOUSE OF DELEGATES:

The Committee on Endowment held its annual meeting in Paola on April 6, 1941.

There were present J. T. Reid, M.D., of Iola, H. O. Bullock, M.D., of Independence, P. A. Pettit, M.D., and the chairman. There were letters from E. S. Edgerton, M.D., of Wichita, J. L. Jensen, M.D., of Colby, and a wire from Earl L. Vermillion, M.D., of Salina. Mr. Lyle Armel of the University of Kansas Endowment Association was also in attendance. New members were told something of the background of this committee, and Mr. Armel explained that his association is handling about \$75,000 on various medical matters.

Fairly full and free discussion brought us to recommend that our members:

1. Push for donations or bequests to promote a variety of things that concern our profession—such as research matters, surveys, including studies in economics and the like, and scholarships or loans.
2. Consult the committee when in doubt or when needing help or support.
3. Accept the offer of the University of Kansas Endowment Association to furnish legal service when anything of importance is to be done.
4. Send selected material from the Endowment Association to our own mailing list—probably when the cards go out next spring.

We believe a resume of what J. M. Porter, M.D., and others have done in the hands of the committee and other interested people would so "soften" the situation that our work would become more efficient and our results larger. Mr. Armel agreed to furnish such a resume. We decided to prepare three or four little reading notices about the possibilities and ask for publication of them in the Journal. Some definite and particular moves and ideas were discussed, but none of them are ready for publication.

The following report was presented by Lyle S. Powell, M.D., Chairman of the Committee on Conservation of Eyesight.

TO: THE HOUSE OF DELEGATES:

As chairman of the Committee on Conservation of Eyesight of The Kansas Medical Society, I have the honor to report the following activities of this body during the 1940-41 period.

Three meetings of this committee were held during this year. The first, held in Wichita in May, 1940, had to do principally with technicalities in the administration and operation of the state eye program being carried on in conjunction with the State Board of Social Welfare.

The second meeting was held on June 27, 1940, in Topeka. This was a joint meeting of the State Board of Social Welfare and the Committee on Conservation of Eyesight of The Kansas Medical Society. A spirit of earnest cooperation was evidenced throughout the meeting between the board members and the committee members. Details as to administration, operation and policies of the state eye program were discussed and harmonious action taken.

The third meeting was held in Wichita on March 30, 1941, at which time several matters of policy were discussed and acted upon. It was voted to advise the delegates of The Kansas Medical Society to the American Medical Association to act against a contemplated resolution pertaining to inadequately trained eye practitioners. The committee voted to continue supervision of the eye, ear, nose and throat section of the Journal and to conduct a survey of individual society members as to their wishes in the matter of short-term post-graduate instruction in ophthalmology.

A number of the committee members and a number of ophthalmologists who are not on the committee have participated in instructional talks to lay groups at the request of the State Board of Social Welfare. It is felt that considerable ground has been gained in this way.

The state eye program is proceeding successfully and smoothly. We are especially pleased at the harmony existing among all participants. Our committee meetings have been universally well attended.

The following report was presented by Philip W. Morgan, M.D., Chairman of the Committee on Study of Heart Disease:

TO: THE HOUSE OF DELEGATES:

The Committee for the Study of Heart Disease has continued to seek financial aid from federal sources for planned lectures in various centers on cardiovascular problems. At present a list of titles of talks which Kansas men are prepared to make to medical groups is being compiled and will be sent to county secretaries. This, the committee felt, might serve temporarily in lieu of an organized series of lectures by out-of-state men for the general profession, since to date no funds are available for the latter.

The committee presented an exhibit at the Wichita meeting last year and plans one this year, featuring American Heart Association material.

In October, 1940, a five-day post-graduate course in advanced cardiology and electrocardiography given by Frank N. Wilson of Ann Arbor was arranged for by the committee. This was similar in every respect to the course given in 1939 by Dr. David Scherf of New York. The 1940 course was enthusiastically received and the men who financed and attended the course felt fortunate in having Dr. Wilson who is acknowledged by many as the world's greatest authority on electrocardiography. The committee arranged through the Kansas Heart Association a dinner in honor of Dr. Wilson and a number of out-of-state as well as Kansas men attended the dinner.

The committee is happy to announce that this fall's instructor will be Dr. Tinsley Randolph Harrison, widely quoted author of a large monograph on the circulation and newly appointed Professor of Medicine at the New Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C. The course is open to any member of The Kansas Medical Society but is planned with the assumption that all matriculants have had similar work.

At the regular annual meeting of The Kansas Medical Society, the committee working with the Kansas Heart Association has arranged a dinner meeting for Tuesday, May 13. The two guest out of the state Cardiovascular speakers Eugene M. Landis, M.D., of Charlottesville, Va., and Arthur L. Smith, M.D., of Lincoln, Neb., have accepted an invitation to be present and to talk.

The committee is attempting to act as a relay station for activities, etc., suggested by the American Heart Association. To that end a summary of the "data for Criteria for Diagnosis" has been prepared and is offered gratis at the heart committee booth for all who care for the summary. Through the bureau of vital statistics it is hoped to have this information sent to physicians reporting cardiovascular deaths.

The electrocardiographic census of Kansas is being maintained up to date and a map graphically showing the distribution is on display in the heart booth.

Data on the incidence of various types of heart disease as seen by men in practice is still being collected, and when the total material is larger will make instructive study.

To date the committee does not feel lay education needs stimulation; it needs sedation on cardiovascular information.

During the year the committee held two meetings and use was made of correspondence to avoid other meetings.

As chairman it is a pleasure to report that every member of the committee has unselfishly cooperated to make the above accomplishments possible. The whole hearted cooperation of the members of the Kansas Heart Association has been a stimulus and deserves commendation.

The following report was presented by A. R. Hatcher, M.D., Chairman of the Committee on Hospital Survey:

TO: THE HOUSE OF DELEGATES:

The committee also feels that a survey of Kansas the past year. The committee being composed of eleven doctors and being separated quite widely geographically in the state has prevented a called meeting with all members present. Since no other agency maintains a complete list of Kansas hospitals, other than the Kansas State Hospital Association and The Kansas State Medical Society, it is the feeling of the committee that this activity should be periodically continued in future years.

The committee also feels that a survey of Kansas hospital equipment should be conducted during the next several years. It is believed that accurate information of this kind will materially aid the county medical societies, being able to make recommendations for the purchase of equipment necessary to provide good medical service, and in eliminating duplication of facilities which are already conveniently

accessible, obviously obtaining more efficient and economic use of medical and hospital equipment.

The committee has continued its study of group hospitalization plans. It has proceeded conservatively and cautiously in this respect, for the reason it feels the Kansas problem differs materially from the industrial areas in which most group hospitalization plans are being operated. Our investigations have caused us to believe that the majority of the medical profession in Kansas are in favor of some type of hospital insurance, whether it be called Group Hospital Insurance or Kansas State Hospital Insurance Plan, or whether the plan covers the sale of hospital insurance to individuals by any substantial plan.

The Kansas State Hospital Association has adopted a Mutual Non-Profit Hospital Service Plan and Senate Bill No. 214, relating to this act has been passed in the session of 1941. It is the understanding that this act makes it possible for any corporation or hospital complying with the state insurance regulations to operate and offer hospital service on a pre-payment plan. Several local group hospital experiments have been commenced in the state during the past two years, which, it is believed, will provide considerable information on this subject. It is known that an indefinite number of Kansas State Hospitals will group themselves together as a Mutual Non-Profit Hospital Service Agency. However, it is voluntary on the part of the hospitals as to whether they wish to join in the plan.

The committee has attempted to cooperate in all ways possible with the Kansas State Hospital Association. That organization was successful in passing a hospital lien law in the 1939 session of the legislature and with the addition of the recent act passed pertaining to hospitalization plans it is certainly a stride forward in the hospital field.

The present status as to the number of ethical medical hospitals in Kansas at this time is as follows:

Number of hospitals.....	116
Number of hospital beds.....	14,232
Number of hospitals belonging to the Kansas State Hospital Association.....	91

The Kansas State Hospital Association and its officers have cooperated graciously in affording information at any time and the committee wishes to offer thanks.

The following report was presented by A. C. Armitage, M.D., Chairman of the Committee on Locations:

TO: THE HOUSE OF DELEGATES:

It is with a great deal of pleasure that we make the annual report of the Committee on Locations.

The committee was organized at too late a date last year to contact men leaving their internships. So the committee conducted a survey to determine the need of physicians in the state of Kansas. This survey was conducted by the members of the committee and through the county medical societies. Any request directly from communities was referred to the respective county society before that community was placed on the list of locations.

During the past year, many requests from physicians within and without the state, have been received. A list of locations available, with all information possible to obtain of each community, has been sent to these physicians. During the year, we have

aided about thirty physicians in obtaining new locations.

Following this survey, about two hundred hospitals having internes were contacted and an enthusiastic response was obtained from the majority of these institutions.

At the present time many requests are coming in from internes who will be looking for a place to practice after July 1. The calling of many into the Army has opened another field of activity for this committee. We have had many requests from physicians hoping to contact some one to take their practice while they spend a year in the army. We have been able to aid many in this respect.

The University of Kansas School of Medicine has wholeheartedly endorsed the activities of this committee.

This committee feels that there is a definite need for work of this type to physicians and communities, and we would recommend to the House of Delegates a continuation of this work.

The following report was presented by Ray A. West, M.D., Chairman of the Committee on Maternal Welfare:

TO: THE HOUSE OF DELEGATES:

Your chairman respectfully submits the following report on the activities of the Maternal Welfare Committee for the year ending May, 1941.

1. The completion of the brochure of minimum standards of obstetric care. This was prepared by the members of this committee and is being printed with funds obtained through the courtesy of the Kansas State Board of Health. It being the intention of this committee to place a copy in the office of every Kansas physician as well as in the libraries of various social agencies and schools.

2. Mother training classes: This is a project regarded by your committee as a very important medium for lay education having as its object lowering of maternal mortality and morbidity. The plan of Cleveland, Ohio, and the University of Kansas Hospitals is being studied in the hope of later instituting such a plan for Kansas.

3. Rules for hospital conduct of obstetrical cases: Your committee is of the opinion that these rules should be universally adopted by the hospitals of Kansas and that it would be of greatest aid in lowering maternal mortality and morbidity. This committee has made a request to the Council of The Kansas Medical Society for their approval, but as yet it has not been acted upon by the Council.

4. Dr. Howard Clark, chairman of the sub-committee on incubator program reported that at least one incubator has been placed in each county in the state, although there are a number of hospitals which do not have incubators. Dr. H. R. Ross explained that the State Board of Health's hot water type incubator can be obtained for \$17.00 in lots of fifty (50).

The committee felt that the incubator problem was satisfactory at this time. It was suggested that local interest might be created among civic clubs towards the purchase of additional incubators.

5. Kansas Obstetrical and Gynecological Society: This committee, after much study and discussion, voted to undertake the formation of a State Obstetrical and Gynecological Society, the reasons for which ac-

Meat...

and the Dietary Fallacies in the Public Mind

THE arc of the pendulum of human opinion tends always to be wide, swinging from one extreme to the other, particularly in the attitude toward foods and diets. Regardless of the results of scientific research, misconceptions and prejudices are apt to persist, frequently leading to nutritional detriment.

Prejudice against meat gained impetus during the last years of the nineteenth century with the publication of a work entitled "Uric Acid as a Factor in the Causation of Disease" by Alexander Haig. Obviously Haig's theory has been discredited by scientific investigation; yet in the public mind there still persists the erroneous belief that meat aggravates such disorders as gout, rheumatism, and hypertension.

Another fallacy still held in some quarters—that the intake of meat should be reduced during the summer months—prob-

ably had its origin in the discovery of the specific dynamic action of proteins. Yet protein needs are in no way influenced by the seasons or their temperature.

The report of Chittenden of Yale strengthened the cause of the carniphobes. While his research revealed the possibility of existing on a minimum protein diet, it justified neither his assumption that better health would result from holding the protein intake to the minimum nor the fad of protein-poor diets that developed.

The value of a liberal amount of meat in the dietary of children as well as adults has now been well established by scientific investigation. Its complete proteins, B complex vitamins, and minerals (iron, copper, and phosphorus) supply a large proportion of the daily requirement of these nutritional essentials.

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tion were numerous—prominent among which, however, were:

First: That the work of lay as well as medical education could be more successfully carried on if the greatest possible number of Kansas physicians were made cognizant of the problems.

Second: That the added prestige of a state society would make it possible to carry post-graduate training to more men throughout the state.

Third: That the added prestige of a state society would make it possible to obtain better teachers for the post-graduate courses.

Fourth: That a state society of this nature would bring about easier co-operation between Kansas doctors, the Kansas State Board of Health and the Kansas State Board of Social Security.

Therefore, with this background of discussion and plans, an organization meeting was held March 6, at Wichita which was attended by thirty-eight Kansas doctors and the organization of The Kansas Obstetrical and Gynecological Society was brought about, with the first annual business meeting and banquet to be held at the time of the eighty-second annual State Meeting.

6. This committee voted that an exhibit on maternal welfare prepared from state and national material be compiled for the scientific exhibit section of the next state meeting.

7. The committee accepted the report by Dr. Ross from the Kansas State Board of Health which gave the lowest mortality rate Kansas has ever enjoyed, 3.4 maternal deaths per thousand live births.

The following report was presented by H. M. Glover, M.D., Chairman of the Committee on Medical Economics:

TO: THE HOUSE OF DELEGATES:

In reporting for the Committee on Medical Economics for the current year, I beg to advise that it has not seemed feasible to hold a meeting of that committee this spring. We have cooperated with the Journal in the editing and supplying of material for their medical economics section. By correspondence we have set up and discussed the various items assigned and decided upon for our 1940-1941 program which are as follows:

1. Continued study of the indigent medical care problem.
2. Continued study of group hospitalization plan.
3. Study of prepayment medical service plan.
4. Attempt to arrange conferences with farm and labor groups to discuss medical cooperatives, health insurance and other medical economics problems.
5. Correspondence or conferences with Kansas Congressmen to discuss national legislation pertaining to medicine and public health.
6. Considering of the issuance of bulletins to the county medical societies stressing the need for local medical economics committees and local medical economics activities.

The following report was presented by Fred J. McEwen, M.D., Chairman of the Committee on Medical Schools:

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TO: THE HOUSE OF DELEGATES:

The Committee on Medical Schools held one meeting in Wichita, on December 15, with Dean H. R. Wahl and Doctors O. O. Stoland and N. P. Sherwood as guests.

The problems of the medical school and its relationship to the medical profession in Kansas were freely and openly discussed at this meeting. The committee was pleased with the fine spirit shown by the Dean of the medical school and the members of the faculty in the discussions at this meeting.

The more important points which deserved some consideration and thought are as follows:

(1) The pre-clinical division of the medical school at Lawrence still occupies crowded, scattered, and make-shift quarters, as it has done in the past. The provision for a new building at the University for the engineering school may be somewhat helpful in relieving some of the crowding, but this division of the medical school needs assistance so that in the future they may have a science building to properly house the first one and one-half years of medicine at Lawrence.

(2) The problem of admissions continues to remain a difficult one. Some 600 applications are received every year for the freshman class. A committee of the faculty has now made it a policy to personally interview all applicants, and after the out-of-state application have been rejected, there is still insufficient room for all of the qualified Kansas applicants. The faculty regrets this situation and is doing everything in its power to accommodate all of those who are

found to be fully qualified, in good health, and who have good scholastic standing.

(3) The library of the medical school at Kansas City has been receiving a large number of medical journals which the Editorial Board of The Kansas Medical Society receives on an exchange basis. The medical school is very grateful for these journals and hopes that the Editorial Board will continue its present policy.

(4) The committee is pleased to know that the officers and staff of the medical school are continuing the policy of treating only indigents in the outpatient clinic of the medical school. A full time social service department is maintained to try, as far as possible, to eliminate those who should not partake of this service.

(5) The committee was pleased to have had a part in recommending certain appropriations in the last legislation for the medical school, and is grateful for the assistance of the Committee on Public Policy of The Kansas State Medical Society in that regard.

(6) The committee wishes to commend the medical school in its program of post-graduate education, which is offered to the medical profession of the State of Kansas under the auspices of the Extension Department of the University of Kansas. These courses are offered every spring and are so diversified that almost every physician in the state will find interesting work with the latest developments in all branches of practice presented by the faculty of the university.

(7) The committee is happy to report to the House of Delegates and the State Society that the

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Medical School of the University of Kansas is making steady and constant improvement. It urges the various members of the State Society when in the vicinity of Kansas City, to visit and inspect this fine medical school. The new out-patient clinic is in full operation and during the coming year, additional departments will be equipped and put into operation, and too, those who have not visited the school for the past few years have a very pleasant surprise in store.

Dean Wahl has prepared a statement dealing with medical school, which is attached and presented with this report. (Editors note: Dean Wahl's report will be published in the May issue of the Journal.)

The committee feels that Dean Wahl and the entire membership of the faculty and the hospital staff are to be commended for their fine work in building and maintaining a really fine medical school in the State of Kansas.

The following report was presented by John M. Porter, M.D., Chairman of the Committee on Scientific Work:

TO: THE HOUSE OF DELEGATES:

The Committee on Scientific Work, while omitting all meetings as a matter of economy and because of the pressure of defense work and legislative activities, has had an active and relatively successful year. Cooperation of the members, often difficult when meetings are not held, has been excellent. Continuation

of the general plan of activity with some extensions and attention to neglected details is advised.

The major work of the committee as in 1939-1940 has been to assist the Program Committee in arranging the part played by members of the Society in the annual meeting. With the excellent cooperation of the Topeka group, papers by seventeen Kansas men were selected for presentation at the 1941 meeting. The Shawnee County Program Committee has been good enough to express their thanks and satisfaction for this service. Possibly of more importance than this mere accomplishment is the fact that efforts to secure papers covered the entire state and to a large extent the entire membership of the State Society. There were over thirty offerings from which the final choices were made.

From papers not utilized for one reason or another, some have been offered to the Journal of The Kansas Medical Society for publication, others have been reserved for presentation at county and district meetings and some have been made the basis for scientific exhibits at the May meeting. The promotion of scientific efforts before smaller meetings by members of the Society is one phase your committee wishes to emphasize for the future. Cooperation for the state meeting has been excellent but very little has been accomplished along scientific lines for other meetings. The attention of everyone concerned with programs for local meetings is called to this service offered by the

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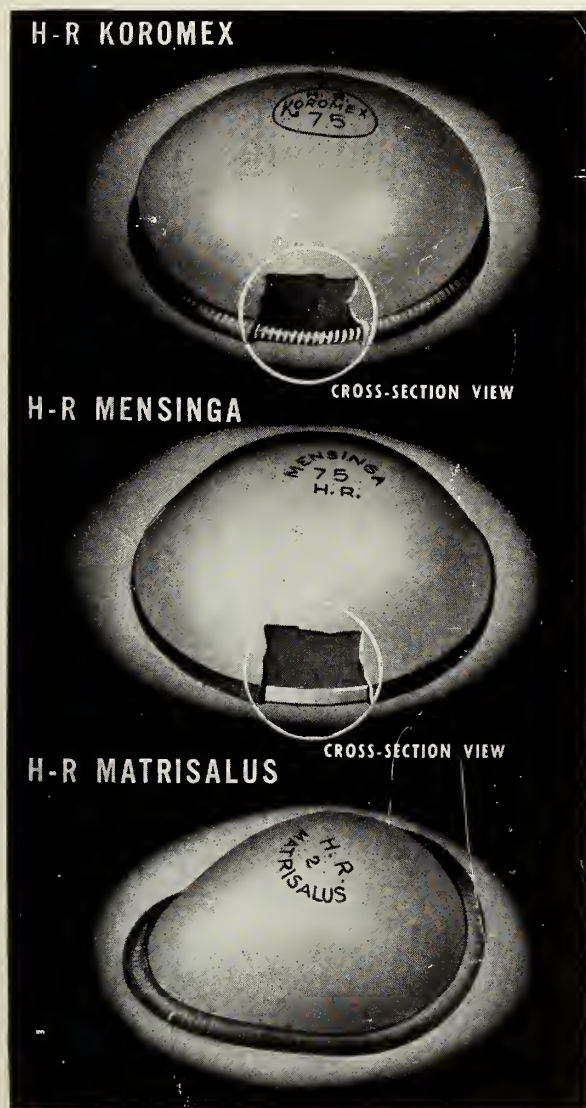
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committee.

Cooperation has been offered to the committee in charge of commercial exhibits at the state meeting. One research project originated in the preceding year has continued to the present and should be ready for an early report. The possibilities of extension of this activity should be emphasized.

In spite of excellent cooperation from the Kansas State Board of Health, the plan of enclosing scientific bulletins and news regarding public health conditions has been allowed to lapse recently. This service can be renewed at will and probably is more valuable if utilized only for unusual situations. During the past year, except for moderate epidemics of measles and scarlet fever, nothing of importance has arisen other than the nation-wide influenza epidemic and as bulletins from the state authorities and United States Public Health Service covered this adequately there seemed to be no occasion to issue further information.

A sub-committee of the Committee on Scientific Work spent some time in analyzing a proposed Uniform Narcotic Act which was eventually introduced into the State Legislature. Partly through our efforts this bill, which seemed to the committee members a

mere addition to the red tape of the Harrison Narcotic Act, was defeated in the Committee of the House.

Some informal attempts have been made to correlate various graduate meetings and courses held in the state and to encourage worthwhile efforts in this line. Largely due to the fact that so many varied groups are interested in these problems, very little has been accomplished by your committee. The fact that nothing was done reflects the excellence of these programs and your committee feels that the offer of cooperation and correlation is sufficient in this regard. Further encouragement of scientific programs by county and district societies is indicated and is part of the problem already mentioned of supplying speakers for these meetings.

Dissemination of scientific developments in the progress of medicine to membership of the Society, a surprisingly large proportion of whom receive no scientific journal other than the Journal of The Kansas Medical Society, still remains our hardest problem to solve. At the close of each year it is easy to look back and see the milestones which should have been recognized, but to realize their value as they come over the horizon is a different matter. Your com-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph. Gon. & Ven. Dis.*, 23, 201 (March) 1939.

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mittee is still working on this problem and asks not only your patience but your help, and will welcome any suggestions which can hope to make this plan of service.

The following report was presented by B. I. Krehbiel, M.D., Chairman of the Committee on Child Welfare:

TO: THE HOUSE OF DELEGATES:

The committee has had several meetings during the past year, but being a new committee, progress has been slow. Last summer during the poliomyelitis epidemic a state survey of respirators was made. It was found that there was a good distribution in the state except in Councilor districts Ten and Three. Letters were written to the Councilors of these districts, and I am happy to state that due to this stimulation a respirator was purchased by civic clubs of Southeastern Kansas, taking care of this district. Incidentally, the committee was congratulated on this work by the National Foundation for Infantile Paralysis.

Throughout the winter this committee has acted as a consultant to the Kansas State Board of Health in establishing a child health demonstration and field training center in Gove, Graham, Sheridan and Trego counties. Plans are being formulated to carry on some type of research work in this project, to be under the supervision of the committee.

Plans are being made to have a meeting with representatives of the Kansas State Department of Education and the Kansas State Teachers Association, to consider ways in which the Society can join with those groups, in the establishment of a more extensive Kansas school health program. It is felt that the best time to educate individuals in health matters is during the school years and that the school program in

Kansas is very lacking in this type of education. This has not been carried to completion due to the general election last fall, and the session of the Legislature this spring, but soon will be taken up.

The committee recommended to the State Board of Health that a regulation be passed requiring vaccination for smallpox and immunization for diphtheria before entrance to school. It was felt that a provision exempting religious and conscientious objectors on filing a certificate stating their reasons for non-compliance would eliminate much of the opposition to this type of legislation.

As yet we have had no word from the Health Department, as to their actions in this matter, but we sincerely hope that they will act favorably upon it.

The committee has been considering plans whereby post-graduate instruction in pediatrics can be carried on throughout the state, under the auspices of this committee. We feel that there is real need for this type of instruction and that the ideal way to do it would be through the State Society. Plans are still tentative, but we hope to have this accomplished within the next year.

The committee has discussed at great length the milk regulation of the state and realize that much work should be done before the state will have a good milk supply. We hope to be able to assist in obtaining good milk throughout the entire state. In fact, the committee feels that this is its most important project and will continue to do what it can along his line.

The committee is making a survey of the quarantine regulations of Kansas and the surrounding states. As soon as this has been completed, recommendations will be made to the State Board of Health for certain changes in present quarantine regulations.

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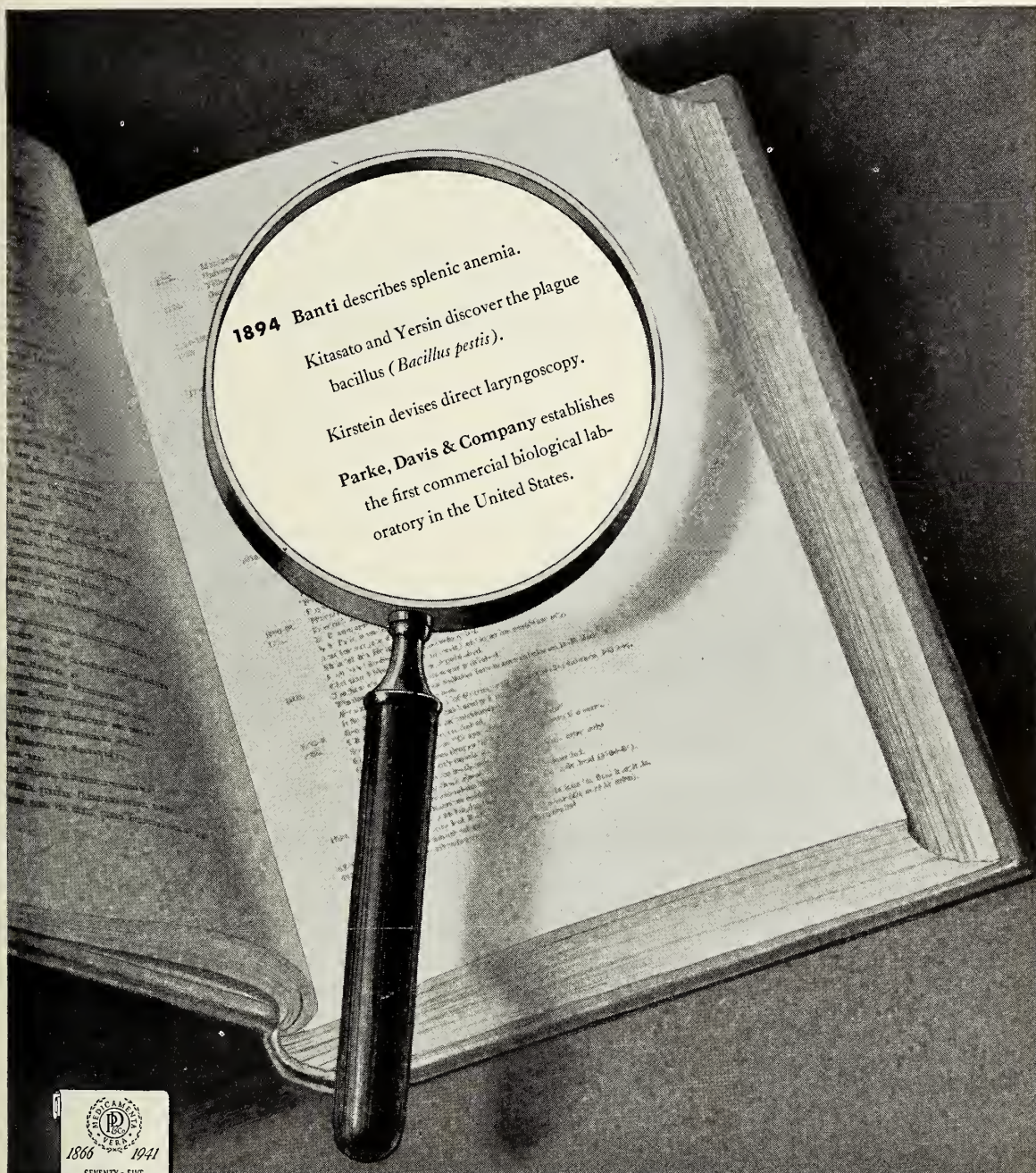
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The following report was presented by R. H. Moore, M.D., Chairman of the Committee on Pharmacy:

TO: THE HOUSE OF DELEGATES:

Your Committee on Pharmacy, composed of the following: H. W. Duvall, M.D.; Harry Lutz, M.D.; J. B. Ungles, M.D.; A. J. Brier, M.D. and myself, has been rather inactive this year. There have been no meetings held to date. However, we will meet during the state meeting in Topeka.

The committee feels that there is some very necessary and progressive work to be done in the way of pure food and drug laws and the barbiturate question. However, these will probably have to wait until some of our current legislative problems have been settled definitely.

To date this committee has not been made a permanent committee, and I should like to recommend at this time if the President sees fit to continue this committee, that it be on a temporary basis.

As chairman of this committee, I wish to thank each individual member for his cooperation.

The following report was presented by E. C. Duncan, M.D., Chairman of the Committee on Public Policy:

TO: THE HOUSE OF DELEGATES:

This committee has little to report although we have held several meetings during the past year.

We have cooperated with Clarence Munns, executive secretary, and F. C. Loveland, M.D., President,

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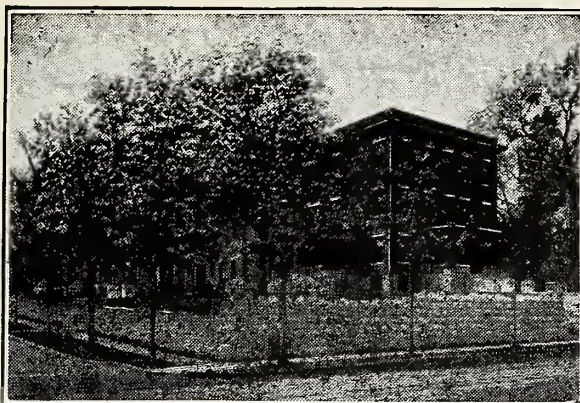
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You will hear from other sources details of the work done by the society the past six months. The work was well done and the major credit goes to Mr. Munns and Dr. Loveland.

If permitted, I should like to make some brief observations to the House of Delegates at our meeting in May.

The following report was presented by Henry N. Tihen, M.D., Chairman of the Committee on Control of Tuberculosis:

TO: THE HOUSE OF DELEGATES:

The work of the Tuberculosis Committee has gone along uneventfully and satisfactorily this past year and I am glad to report that all of the major agencies in the state, namely, the Kansas Tuberculosis and Health Association, the Division of Tuberculosis of the State Health Department, the State Sanatorium and the medical profession are working together in a spirit of harmony and cooperation that reacts favorably and beneficially for all concerned.

Probably the most urgent tuberculosis need in the

state is more sanatorium facilities so that all active cases can be hospitalized and isolated immediately on their discovery. Active work was done in the recent legislature to attain this end with the following results:

The Senate passed a resolution asking the Legislative Research Council to study the possible need of tuberculosis sanatoria in Southeast Kansas. (The resolution was introduced by the Senators from that area.) This will, of course, mean that the little legislature will have an opportunity to inquire into this subject, and into the sanatoria problem generally over the state.

The University of Kansas School of Medicine was successful in obtaining a sizeable appropriation which will enable it to renovate, reequip, and maintain the tuberculosis facilities at that institution.

The Kansas Tuberculosis and Health Association sponsored a dinner meeting with certain representative legislators for the purpose of acquainting them with the Kansas tuberculosis

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problem, and of obtaining their future assistance. We think this activity was very helpful, and that it would be an excellent thing if it is continued each session.

The State Sanatorium under the direction of C. F. Taylor, M.D., is continuing to maintain its usual high standards of work. The new addition, completed a little over a year ago, is already completely filled. Any difficulty in securing admission of cases at Norton is due to the fact that the institution is again completely filled and has a waiting list.

We believe it might also be very proper to comment that the Tuberculosis Division of the Kansas State Board of Health has greatly expanded its work during the past year, and that its present program is the most extensive in the history of that department. In other words, the information we have received seems to indicate that F. C. Beelman, M.D., is accomplishing an excellent job.

The State Sanatorium and the Cherokee County Health Department will present Tuberculosis and Health Association and the Kansas State Board of Health will also probably sponsor a similar exhibit.

The tuberculosis problem in the Southeast portion of the state in the Tri-State area has been given considerable extension. The tuberculosis work in Cherokee County has occurred under the direction of its full-time health officer, J. W. Spearing, M.D. However, adequate sanatorium facilities in Southeastern Kansas are much needed.

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THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

Owned and Published by The Kansas Medical Society

Volume XLII

MAY, 1941

Number 5

PRESIDENT'S ADDRESS*

Forrest L. Loveland, M.D.

Topeka, Kansas

The Kansas Medical Society was chartered February 10, 1859 by the Territorial Legislature then in session at Lawrence, and with the exception of two years during the Civil War has met annually for the purpose of considering all matters pertinent to the welfare of the organization. On this the 82nd Anniversary of our Society we meet again to consider scientific, economic and social problems of vital concern to us all.

More-so than at any other time in our history we are confronted with serious problems. In a spirit of fairness we cannot blame inexcusable wars for all our political and economic ills for after all it is the people that produce them. Nevertheless, war comes to us as it comes to all people and in victory or defeat troublesome problems invariably show their fangs. Unemployment and poverty assume gigantic proportions and whenever these grave offenders stalk the land medical problems spring up over night like mushrooms.

In as-much as the practice of medicine has to do with the vicissitudes of human life it is usually the first target shot at, by those interested in finding fault with established customs. Periods of stress are chosen as being a most propitious time to cry their wares. Undue advantage is taken of our apprehensiveness. Studied efforts humanely and attractively designed to protect all our people, at all times, from the woes and the infirmities of life have been put forth to discredit our present system of medical practice. To date such efforts have met with rigid opposition both within and without legislative halls. No doubt some of the criticisms directed against us are well taken. Our medical horizons must be broadened to meet rapidly changing conditions. The men of medicine are keenly sensitive to the situation and are meeting it with equanimity. Since the beginning of time politically controlled medicine has failed to solve emergency medical problems. The ethical and

scientific practice of medicine, without the intervention of many bureaus or political third parties standing between the patient and his or her physician, can and will solve our problems in due time.

War clouds are again blackening the sky and as a people we are finding ourselves engulfed in the midst of a gigantic military preparedness effort. Unanimity of opinion relative to the merits or demerits of such action is lacking. Too many people believe that the world in general and our own country in particular has gone topsy-turvy and that there is nothing to be done about it. Young and old alike, especially those who have subscribed to a fatalistic point of view, move about as though they were living in a dream-land assuming no responsibility for anything or anybody. Unfortunately, war has no monopoly upon such a point of view. Too frequently it is directed into every channel of human endeavor, slowing progress almost to a stand-still. Even worse, it unfavorably influences the moral values of life without which we are poor indeed. Despite such lethargic manifestations on the part of those who fail to do their own thinking, the great majority of our people are aware of impending danger. They realize that there is an American way of life and they want to preserve it. They realize also the necessity of defending our American institutions against aggression from without or from within our borders. If war must come in order that civilization may endure we should waste no time in our preparation to unleash the dogs of war.

In Kansas, as elsewhere in our country, the men of medicine are answering the call to arms. Both military and civilian needs must be adequately cared for. Insofar as it is possible, our men of military age will serve with the armed forces, while our men above the military age limit will serve the civilian population and essential industries. It has been estimated that approximately 10,000 medical doctors, in addition to present staff organizations, will be required to meet military needs. The rapid growth of communities due to the establishment of defense industries will present health problems for those physicians doing civilian duty. The work of our examining physicians assigned to local draft boards

*Presented at the 82nd Annual Session of The Kansas Medical Society, Topeka, May 13, 1941.

has been outstanding. It is of interest to note that the percentage of rejections due to physical unfitness of Kansas draftees is exceptionally low.

We are barely on the thresh-hold of our preparedness activities. Our efforts must be immediately directed to supplying adequate medical attention to those communities within our State whose physicians have entered the service. County medical societies adjoining such communities must assume for the time being this obligation. Temporary quarters can be established for the period of the emergency and service supplied on a rotating basis or otherwise. Regardless of what we may personally think of war, medical traditions must prevail. This is our job so let us handle it without a whimper.

The relief problem while not as acute as it has been in the past still remains a source of worry. Employment afforded by preparedness activities should lessen the incidence of indigent sickness. As a Society we are deeply indebted to the Kansas State Board of Social Welfare for their interest and co-operation in indigent sick problems. The ability of this Board to correctly appraise the medical phase of the problem has resulted in the establishment of effective indigent medical care programs in about seventy of our counties. The salvation of many of our counties depends upon their ability to rehabilitate those upon relief and indigent sick rolls. Members of county medical societies are proving to be the strong right arms of this endeavor.

Society activities are rapidly expanding. Committee work is excellent. At least three of our committees are sponsoring post-graduate courses second to none in the country. You are familiar with the work of our legislative committee. The medical profession of Kansas greatly appreciated the willingness of the Legislature to uphold and continue the present high standards of medical practice in the State. This matter is of great importance to the public health and welfare of Kansas. For many years no doctor of medicine has been licensed in this State who has not received the excellent benefits of modern medical education. This is an enviable record which must be maintained. Oft times, our activities lead us far afield. It is well that this happens occasionally to every professional man. Rubbing elbows with law-makers, lawyers, farmers, business men, industrialists, teachers, and preachers gives us an appreciation of the other fellows problem. It stimulates a spirit of tolerance so necessary to achievement. It has been said that the saving of lives is not enough. The perfecting of lives should be our aim. Medicine must be concerned with cultural values, the passion for wisdom, beauty and justice. These are the real expressions of health and the

source of much happiness and success. I repeat, our medical horizons must be broadened to meet rapidly changing conditions.

Let it be remembered that the importance of lay education cannot be over-emphasized. Our past indifference to this lucrative field of medical opportunity is inexcusable. Our patients know to little of life, how to live it or how to conserve it. Most of our people are unfamiliar with the potential resources for health. The relevant facts of life are still a deep mystery to the average man and woman. Think of what an informed public opinion would mean to the life of every community. Ignorance is quite as inexcusable as war. Like soap and water a smattering of knowledge is always obtainable if there is a will to find it. For the good of all concerned our profession must assume its share of this educational obligation.

Despite perpetual conflict the world over, there is room for reconciliation and progress. This is particularly true in our own country and especially so in Kansas. Harmony and achievement are well known to Kansas people. They are not strangers to the men of Kansas medicine. Tomorrow will be another day and may our hope be transmuted into realization. As individuals let us put ourselves together and the world will come out all right. As men of Kansas medicine let us recall Oslers "Master word in medicine. 'Work'." It is the touchstone of progress, the measure of success in every day life. Let us write it upon the tablets of our hearts and bind it upon our foreheads.

Once again, I thank you for your kindly consideration of me. I shall never forget the experiences of the past year. I shall never cease to be thankful for them. It is my sincere hope that as a Society and as individual members thereof we have been enabled to move a little farther along the road that leads to achievement and progress in our professional capacities.

May the coming new year be the best of all.

One of the strangest twists of the war is that London's psychiatrists are sitting in their offices with nothing to do. London's neurotics, estimated at seven per cent of the population, have something else to think about now.—Survey Graphic.

Although there is no dependable routine x-ray method for determining the sex of the unborn child, under certain peculiar circumstances it is sometimes possible after about the seventh month of pregnancy, Hygeia, The Health Magazine states in answer to an inquiry.

SPINAL ANESTHESIA IN GENERAL SURGERY*

AN ANALYSIS OF 400 CASES

Orville R. Clark, M.D.

Topeka, Kansas

The principle part of this paper is an analysis of 400 consecutive cases of attempted spinal anesthesia—my experience with spinal anesthesia in the last seven years in my association with Dr. W. M. Mills. I use the expression "attempted spinal anesthesia" as there were five cases in which the anesthesia induced was not sufficient to even start the operation, in addition to one in which I experienced the embarrassment of breaking a needle while endeavoring to make the puncture. The causes of these failures will be considered later.

The cases comprise a selected portion of a general surgical practice, and make up approximately one-sixth (16.88 per cent) of the cases operated during this period. From this it is evident that enthusiasm for this one type of anesthesia has not been pushed to the exclusion of all other types.

The types of operations performed under spinal anesthesia during this period are listed in Figure 1. It will be noted that there is a fairly wide distribution, and that the anesthesia has not been used for a limited type of operations.

Some of the cases are the "poor risk" type, for whom it was considered spinal anesthesia entailed perhaps less danger than some type of general anesthesia, although they were far from satisfactory risks for any anesthetic. Though it is not a fair test of spinal anesthesia (or for any other type) to give it only for those cases which are in too poor condition for other types of anesthesia, it is true nevertheless that there are a number of patients who do not seem able to withstand the depression of an anesthetic in addition to the operative procedure contemplated, who will go through it under a spinal in fairly good condition. In my group there were fifty-three anesthetics which were given to individuals because it was felt they would not be able to undergo the operation under other types of anesthesia, and the procedure contemplated was too extensive to be done under local infiltration. As nearly half of the mortalities are in this group of a little over one-eighth of the patients, it is quite evident how serious a situation we have in this group.

There are thirty-four individuals in the series who had two spinal anesthetics. Of these seventeen were "two stage" procedures for prostatic enlargement or bladder diverticulum. We have come to the con-

FIGURE 1
OPERATIONS PERFORMED UNDER SPINAL
ANESTHESIA

Urological	102
Prostatectomy	38
Prostatic Resection	14
Cystostomy	26
Bladder Resection	4
Cystoscopy	7
Radical Operation for Ca Penis.....	1
Kidney and Ureter.....	12
Obstetrical and Gynecological.....	58
Laparotomy	41
Perineal Plastic	15
Cesarean Section	2
Rectal	47
Hemorrhoidectomy, etc.	44
Radical Resections	3
Appendectomies	44
Simple Appendectomies	25
Appendectomy—Drainage	19
Colon	26
Resections	8
Colostomy or Ileo-colostomy	16
Diverticulitis	1
Colofixation	1
Hernia	51
Inguinal and Femoral.....	41
Ventral	10
Lower Extremities	23
Amputations	11
Fractures, Cartilage Operation, etc.....	12
Inguinal Dissection	1
Stomach	13
Biliary Tract	17
Intestinal Obstruction	6
Suture of Ruptured Wound.....	3
Exploratory Laparotomy	9
Total	400

clusion that a relatively low spinal anesthesia is better for doing the suprapubic cystostomy than local infiltration for several reasons: It makes the patient more comfortable; it makes it possible to conduct a thorough digital or even visual exploration of the bladder which may be of considerable value to determine the presence of stone or diverticulum, and occasionally in detecting an unsuspected prostatic carcinoma; and we feel that it adds very little to the danger of the procedure when a small dose is used.

Of the 400 cases, 284 were given procaine, novocaine, or neocaine, and are hereafter grouped together as "procaine" since the chemical make-up of the drugs is the same; seventy-three were given pontocaine; thirty-seven metycaine; three spinocaine; and two nupercaine. My use of the last two agents has been only in recent months, and, with rather limited indications the cases are few in number—too few to be of any statistical significance.

The technique used at present is briefly described below. The technique varies depending on the type

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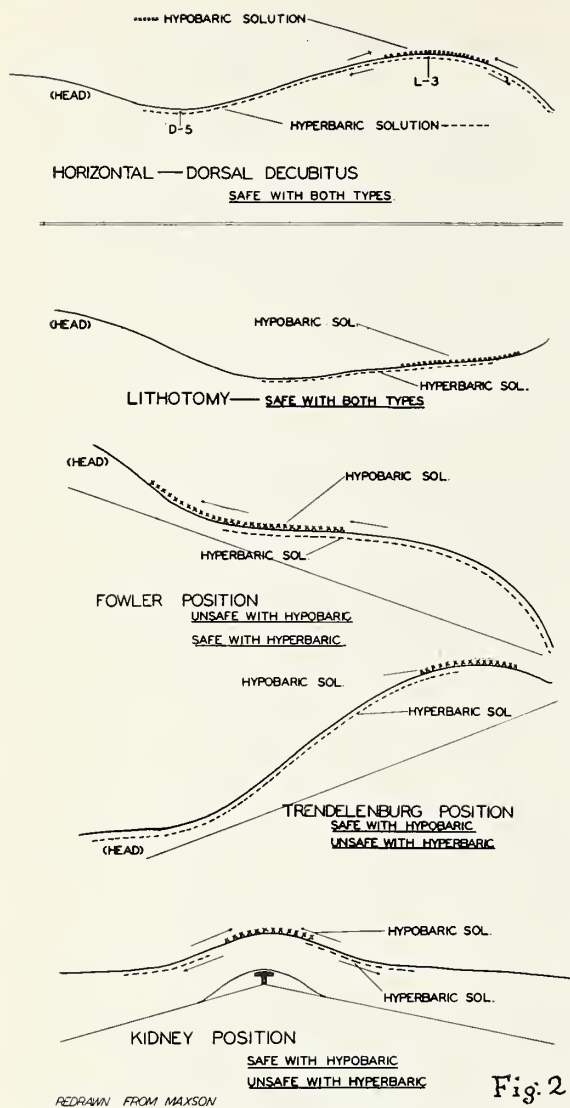


Figure 2. Diagrams illustrating the effect of various positions on the movement of hypobaric and hyperbaric solutions.

of anesthetic solution used. There are three types, distinct in whether their specific gravity is greater, or less than that of the spinal fluid. The hyperbaric solutions, or those heavier than the spinal fluid, include procaine or metycaine which is dissolved in the spinal fluid or is administered as a prepared concentrated solution. Being heavier than the spinal fluid, these tend to flow downward, and hence in Trendelenburg position flow toward the head, while in Fowler's position, or while sitting, they tend to flow away from the head. The hypobaric solutions are lighter than the spinal fluid, and hence flow toward the head in the sitting or Fowler's positions, and away from the head in the Trendelenburg position. Among the hypobaric solutions are spino-

caine and the Jones preparation of nupercaine (1:1500). The isobaric solutions are practically the same weight as the spinal fluid and so are unaffected by gravity—at least for practical purposes. Pontocaine is an example of this type. The effect of various positions commonly employed on the operating table upon the hypobaric and hyperbaric solutions is shown in Figure 2.

For low (sacral) anesthetics, using procaine or other hyperbaric solution I have used the "Sitting Bull" technique of Maxson in which sixty to one hundred mg. of the procaine is dissolved in 1.5-2.0 cc. of the spinal fluid, and injected very slowly into the fourth lumbar interspace with the patient in the sitting position during and for five minutes following the injection. This tends to limit the action of the anesthetic solution to the lowermost segments of the cord, and limits the anesthesia to the "saddle" type in the majority of cases, while occasionally the legs will be anesthetized, or rarely paralyzed. After five minutes the patient is put in the position desired for the operative procedure. The same effect can be produced by using spinocaine (or other hypobaric solution) injected in the lateral position instead of sitting, and followed by immediate Trendelenburg position to confine it to the sacral portion of the cord.

For lower abdominal work I use procaine in a dosage of 120-150 mg. dissolved in 2.0-3.0 cc. of spinal fluid and injected in the third lumbar interspace with the patient in the lateral position. The table is kept flat for ten minutes unless it is noted that the level of anesthesia is not extending high enough, when Trendelenburg position may produce convection upward to the desired level by gravity. When the anesthesia has reached the desired level the table is again leveled for the remainder of ten minutes, to prevent unnecessary upward extension. After a period of ten minutes the anesthetic should be fixed in the tissues and the patient may be put in any position desired for the operation. For operations which are expected to last longer than the duration of procaine anesthesia pontocaine is used by a similar technique, but is injected in the second lumbar interspace in a dose of from twelve to fifteen mg., in 2.0-3.0 cc. of solution. Because it is practically isobaric the position should have relatively little effect on the level of anesthesia, but I have usually preferred to keep the table level for an initial period. For nupercaine or spinocaine, the lateral position should be used for injection, and a slight Trendelenburg position maintained to prevent undesirable upward extension of the anesthetic solution.

For upper abdominal work I use pontocaine almost entirely now, because of its longer period of

anesthesia, which is frequently of value in this type of operation. From fifteen to twenty mg., in 3.0-4.0 cc. of solution is injected in the first lumbar interspace, or the space between the twelfth dorsal and first lumbar vertebrae, and the table kept flat. If procaine is used for this work it is given the same as for the lower abdominal work, but in doses of 150-200 mg., and the table tilted in mild Trendelenburg position until the anesthesia has reached nearly to the desired level, when it is again leveled for a ten minute period of fixation.

For kidney surgery the hypobaric solutions are particularly suited as they may be given with the patient in the position ready for operation, then the kidney rest raised, which will give the greatest concentration of the anesthetic at the top of the curve. Spino-caine in doses of 1.5-2.0 cc. (150-200 mg. of procaine) diluted with a volume of spinal fluid nearly the same, works nicely. It is not necessary to turn the patient from one side to the other in using hypobaric solutions for this type of operation as the lateral position tends to give the greatest anesthesia on the upper side.

The percentage of satisfactory anesthetics is shown in Figure 3. In addition to those which were "entirely satisfactory to both surgeon and patient" ("A"), there is included a second group in which

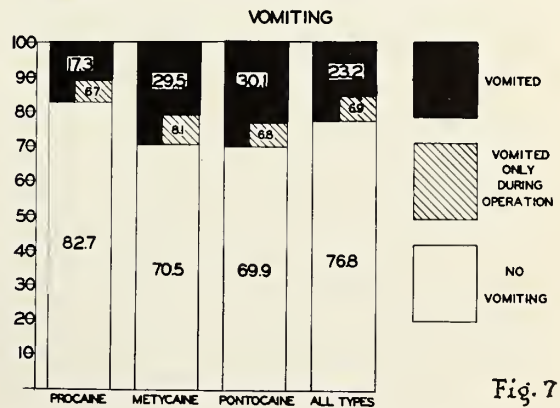
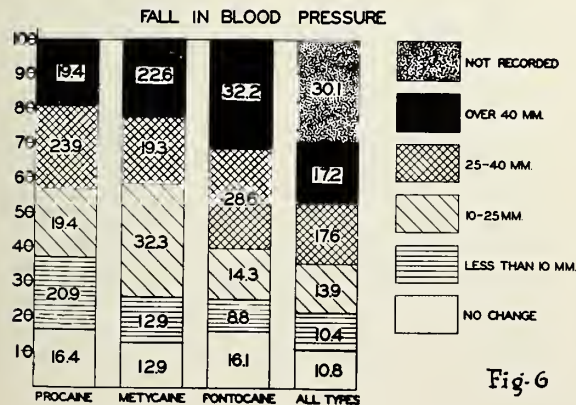
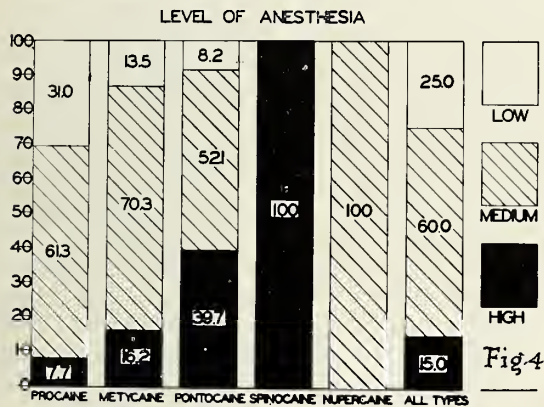
the anesthesia was satisfactory for as long a period as could be reasonably expected, but in which the operation for some reason was prolonged beyond the anticipated time ("B"). A good percentage of these received supplementary anesthesia for closure of the wound. This group could be considered a result of faulty estimation of the duration of the operation, or perhaps to choice of the wrong anesthetic agent by the anesthetist, but in fairness can hardly be called anesthetic failures.

FIGURE 3
QUALITY OF ANESTHESIA

	Group "A"	Group "B"	Inadequate
Procaine	92.8%	5.3%	1.9%
Metycaine	97.3	2.7	0.0
Pontocaine	74.0	6.8	19.2
Spinocaine	100.0	0.0	0.0
Nupercaine	50.0	0.0	50.0
All Types	89.5	5.2	5.3
High Anesthesia (60)	66.7	11.7	21.6
Medium " (240)	91.7	3.7	4.6
Low " (100)	99.0	0.0	1.0

It will be noted that 89.5 per cent of all the cases were entirely satisfactory, with another 5.2 per cent falling in the group just described. These total 94.7 per cent. In the remainder the spinal was a failure or so poor that supplementary anesthesia was required for the major portion of the operation. The percentage of satisfactory anesthetics with pontocaine will be noted to be lower than with the other agents. Part of the reasons for this will be brought out later.

Another means of approach to the study of satisfactory anesthesia is by dividing the entire group into three sub-groups, called "high," "medium," and "low" anesthetics. The high group comprises upper abdominal surgery (gall bladder, stomach, high ventral hernias, high colonic resections, etc.) and kidney operations (sixty cases in this series). The medium group includes the majority of abdominal operations (appendectomies, hysterectomies, etc.) inguinal herniae, and operations on the bladder which are



done through a suprapubic incision (240 cases in this series). The low anesthetics are those for perineal work, cystoscopic procedures including transurethral prostatic resections, hemorrhoidectomies, and operations on the lower extremities (100 cases in this series).

We note from the table that the higher the anesthesia is require the greater the percentage of failures. This has a bearing on some of the facts to be brought out later.

Figure 4 shows the percentages of the high, medium, and low anesthetic levels require of the various anesthetic drugs. The most significant finding here is the large percentage of high anesthetics for which pontocaine was used in comparison with procaine and metycaine. This factor is partly responsible for the greater number of unsatisfactory anesthetics with pontocaine shown previously in Figure 3. Spinocaine has 100 per cent high anesthetics—all for kidney operations and all satisfactory—but this number is too small for any real comparisons.

The duration of the operations performed under various types of spinal anesthesia is shown in Figure 5. It is noteworthy that procaine and metycaine were used predominantly for operations of less than one hour (87.6 per cent and 59.5 per cent) while pontocaine was used predominantly for long cases, 81.4 per cent being over one hour and 4.3 per cent over two hours. This is another factor in the increase in the percentage of failures with pontocaine, for of course there is a greater chance of inadequate anesthesia in those cases of long operations than with those of short duration.

FIGURE 5
DURATION OF OPERATIONS

	Less Than 1 Hour	1-2 Hours	Over 2 Hours
Procaine	87.6%	12.4%	0.0%
Metycaine	59.5	40.5	0.0
Pontocaine	18.6	77.1	4.3
Spinocaine	33.3	33.3	33.3
Nupercaine	0.0	50.0	50.0
All Types	58.8	38.9	2.3

Thus, while pontocaine did have a higher percentage of failures than procaine or metycaine, it should be noted that it was also used predominantly in the most difficult cases—the upper abdominal operations and those of long duration.

Although the nupercaine group is too small to draw any conclusions from it, it does demonstrate to some extent the value of this drug in the exceptionally long cases—one of these being two and a quarter hours. One of the nephrectomies under spinocaine lasted for two and one-half hours, the longest duration of satisfactory anesthesia of the entire series. I do not know from experience, nor have I found any specific reference as to whether

the expected duration of spinocaine anesthesia is any greater than with other forms of procaine.

Figure 6 shows the amount of decrease in blood pressure with the various anesthetic agents. There is no significant difference in the reactions of the various drugs used for anesthesia in this respect. Pontocaine is generally supposed to produce less fall in blood pressure than the other drugs, but in this group it will be noted that it produced a greater decrease than procaine or metycaine. It must be remembered again that this drug has been most commonly used for those cases requiring larger doses, and in upper abdominal operations. These are the cases which must necessarily show the greatest amount of change in blood pressure since it is necessary to get the anesthesia up in the middle or upper thoracic levels where the sympathetic nerves originate, and they will also be affected.

It is significant and worthy of mention that there were none of the patients in the entire group in whom the condition during the operation became alarming, or where resuscitation was required. Most of them received twenty-five or fifty mg. of ephedrine sulfate about five minutes before the injection of the anesthetic solution. Exceptions were those patients who had a hypertension, or those in whom the anesthesia was being limited to the sacral segments, when there is no change in the blood pressure as none of the sympathetics are involved. I have continued to use ephedrine because the results have been satisfactory. Many do not use it and it is possible that my cases would do as well without it. When ephedrine is being used it is probably more effective when given intramuscularly, and when given about five minutes before the injection of the anesthetic. This point has been emphasized by Holmgren and Jackson at the Jackson Clinic in Madison, Wisconsin.

The vomiting of the patients during and after operation is depicted in Figure 7. Of all cases 76.8 per cent did not vomit at all, and an additional 6.9 vomited only during the operation, so that 83.7 per cent were free of all post operative vomiting. There is a lower incidence of vomiting in the procaine group, probably again proportional to the greater number of the lower anesthetics.

In Figure 8 the percentage of cases requiring post operative catheterizations are shown. Here again procaine has the lowest percentage with pontocaine next and metycaine is quite definitely above the others. Included in this group (metycaine) are two cases which I wish to mention in more detail as there was a more serious element than mere urinary retention.

One was a case for prostatic resection. He was given 1.0 cc. (100 mg.) of the metycaine solution

FIGURE 8
POST OPERATIVE CATHETERIZATIONS

	Procaine	Metycaine	Pontocaine	All Types
None	50.0%	51.4%	58.9%	52.9%
Total Catheterizations	17.9	40.5	25.4	25.4
Once only	8.5	8.1	6.9	7.7
Less than 7 days....	9.4	21.6	17.8	14.9
7-30 days	0.0	5.4	4.1	2.3
Over 30 days.....	0.0	5.4	0.0	0.5
Group "B" (retention catheter, etc.)	32.1	8.1	12.3	21.7
	100.0	100.0	100.0	100.0

diluted to 2.5 cc. with spinal fluid, and injected slowly in the fourth lumbar interspace while in the sitting position. He was kept in the sitting posture for five minutes after the injection. Anesthesia was prompt, was adequate, and the operative procedure was carried out without difficulty. He had a satisfactory course immediately after the operation, but when the catheter was removed about five days later he was unable to void, although a large catheter could be introduced without encountering any resistance. It was a period of about six weeks before he was again able to void at all, and two weeks more before he could discontinue catheterization entirely. He had a small area of persistent anesthesia over the distribution of the lower sacral segments between the coccyx and anus which persisted for several weeks but disappeared completely. He has since made a complete recovery.

The other case was a man who was operated for a ruptured appendix under metycaine anesthesia induced by 1.6 cc. (160 mg.) diluted to 3.2 cc. with spinal fluid, and injected in the third lumbar interspace with the patient in the lateral position. Anesthesia was adequate for the operation, which was conducted without difficulty. It was necessary to catheterize him post operatively, but not much concern was felt until he was unable to void even after getting up. He also had a persistent anesthesia over the sacral nerve distribution, and an obstinate constipation. He required some catheterization for six months. He gets along well without catheterization at the present time, but still has a marked constipation.

These two cases have caused me considerable concern, and it is chiefly because of them that I have discontinued the use of metycaine in my own work. It may have been purely coincidence that both of these were following the use of metycaine, but on the other hand nothing similar has happened with any of the other drugs which I have used for anesthesia. The nearest approach to it was one individual who required catheterization for sixteen days after an pontocaine anesthesia—the only case which required catheterization for a period longer than

twelve days outside the metycaine group, in which (out of thirty-seven patients) there were three who required prolonged catheterization—the two mentioned above, and a perforated ulcer who had retention for twenty-two days.

The mechanism of this condition is rather obscure, but it seems to me that it was an abnormal prolongation of the pharmacological action of the drug which was apparent only in the particular nerves which supply the bladder and perineum. It could hardly have been traumatic in origin as both punctures were low in the cauda equina. The factor of concentration probably played a part, and individual idiosyncrasy may have had a part. These cases are to be fully reported at a later date, when a more detailed case history and discussion will be presented.

It will be noted that approximately one-fourth of all the patients who were given spinal anesthesia required catheterization at least once, and that if the group of operations on the bladder, prostate and urethra is eliminated (those where there was a retention catheter or a suprapubic tube left in place and the patient had no opportunity or necessity to void—listed in the table as Group "B") about one-third of the patients who had an opportunity to void were unable to do so the first attempt. Though I do not have any comparable figures for the other anesthetics, I think that this may be somewhat above the catheterization requirements of other types of anesthesia.

Mortalities and Complications: The mortality rate is rather high (thirty-four deaths or 8.5 per cent) but when we study the actual causes of death we find that the larger percentage of them were due to causes which were beyond the control or influence of the anesthetic or in many cases of the operation. Fifteen, or nearly half, were in the group of "poor risk" cases which would almost certainly have died under any type of anesthesia; some even without operation.

The cases of death were: Pneumonia four; pulmonary embolus four; peritonitis eight (present at the time of operation in five); tetanus (following compound fracture) one; "general debility" six; cardiac failure two; mesenteric thrombosis (present at time of operation) one; ileus and dilatation of the stomach two; and there were six which died of the condition for which they were operated (such as carcinomatosis).

The group listed as "general debility" I realize is included in a very loose term, but in this particular instance it consists of individuals who were in rather poor condition, who never showed any favorable response at any time after operation, but ran a continuous downhill course and died, without any spe-

cific condition which we could find to account for the death. Four of these were cases of prostatic obstruction, one a closure of a disrupted cholecystectomy wound, and one a resection of the right colon for carcinoma complicated by intussusception. Four cases of pulmonary embolism were encountered, and it was ironical that two of them should have occurred on the same day, in patients whose operations were the same day, and both of whom had some colon disease (one carcinoma, and one diverticulitis). The case of mesenteric thrombosis had the condition before operation, which was undertaken only in the hope that it would be something amenable to surgical measures, but he was in no condition for any radical measures.

If any of these cases are directly attributable to the anesthetic I believe they would be the two listed as cardiac failure. One of these was a prostatectomy who did fairly well for twenty-four hours, then rapidly failed and died about thirty-six hours post operatively. The other was an elderly man who had a cholecystectomy and exploration of the common duct, with removal of two stones from the duct. His progress was excellent for thirty-six hours when he developed a pulmonary edema, and after a temporary rally died sixty hours after the operation. Even in these two, the favorable reaction immediately after the operation precludes the possibility of it being a severe depression from the anesthetic and from which the patient never recovered, and makes it somewhat doubtful whether the entire blame should be on the anesthetic.

The complications which are not included in the mortalities total twenty-three in number, and are: Pneumonia two; bronchitis five; pulmonary infarct one; parotitis one; thrombophlebitis four; post-operative hemorrhage one; back pain one; urinary retention (prolonged) two; broken needle one; paresis of thigh one; peroneal nerve paralysis one; psychosis one; headache two.

Among these are several which are unquestionably complications of spinal anesthesia and are not attributable to anything else. The one case of persistent back pain has not been severe and has not kept him from working but has persisted for nearly two years. The patient states that it is decreasing slowly. I have wondered if this may be an example of the so-called ligamentous backache, from the puncture of the interspinous ligaments by the needle. The cases of paraplegia of the thigh and the peroneal nerve paralysis occurred before I began the use of small gauge needles exclusively, and probably do have their basis in traumatic injury from the puncture. The two cases of headache are distinctly a complication of spinal anesthesia—or at least of spinal punctures. My incidence of this complication has been far be-

low that generally reported, but I am not aware of the factors which may have brought it about. The case of psychosis was an elderly man who developed a degenerative psychosis following a prostatectomy. It is distinctly questionable how much effect the anesthetic had, and how much of it would have developed anyway.

Breaking of a spinal needle while attempting to make a puncture is one of the things we are all apt to think will never happen to us. It may be due to careless or faulty technique in making the puncture, to equipment which is not in proper condition, or to a sudden and unexpected movement of the patient. I had it happen once, and I am not anxious to have the experience again. In this instance I was asked to give a spinal anesthetic on an occasion when I did not have my own instruments with me, and the needle I was using was not only larger than that to which I am accustomed (it was a No. 20, while I ordinarily use a No. 22) but also had a very dull point—so much so in fact that it was impossible to thrust the needle through the skin of the back. Because of this I used one of the hollow "needle directors" to penetrate the skin and interspinous ligament, then put the needle through the director. After it had reached a point at which I thought it might be in the subarachnoid space, the stylet was removed. No fluid dripped from the needle, and the needle was rotated to see if it would flow in the new position, which it will frequently do. It did not, and the stylet was being replaced to readjust the needle, when it was found that it would only go half way through. It was obvious that the needle was broken, and the patient was given a cyclopropane-oxygen anesthesia and the needle removed after some search. The end of the fragment was found in the interspinous ligament, against one of the vertebral spines.

It has been my theory that as I turned the needle, it was sheared off by friction against the sharp edge of the needle director, perhaps made easier by some angulation at the point where it was against the spinous process. I have never cared for these directors for my personal use, and since this incident I have been certain that I do not care to use them. This accident has also served as an incentive to make a more thorough check on the condition of needles before doing a puncture, and to use only rustless steel needles in order to eliminate the danger of rusting of the needle outward from the lumen where it is not visible. I have had no experience with the gold needles.

If one is certain that he has broken a needle, if the proximal portion of the needle or the stylet or both are in place, they should be left there, as they serve as a good guide for finding the remaining

portion of the needle, which might otherwise be very difficult to locate. The technique of removal of broken needles has been carefully described by Lahey, and is given in detail in Maxson's book.

There were a number of failures in the series. Some of course were due to the use of too small a dose so that the anesthesia either did not go high enough or the duration was not sufficient. During my early use of pontocaine I am sure that several failures were due to injecting the solution in too low an interspace. Pontocaine being isobaric is influenced very little by gravity and must be injected at a higher level, particularly for upper abdominal surgery. There were a number of poor anesthetics or even outright failures when I was using a long bevel needle, and I believe these may have been caused by leakage of the solution outside the dura. This is much more likely to happen with a long bevel needle, as it is possible to have the point within the dura so that fluid can be aspirated, yet the lumen is also outside the dura, so that when the solution is injected part or all of it escapes outside the dura.

There have been several failures in another group—where the spinal fluid would drip from the needle, but could not be aspirated by a syringe. Though these will not all be failures, a large percentage will, and if a good flow is not obtained it is probably wise to make a new puncture at a different interspace.

I believe that there is also a group of individuals, small in number, who may be hyper-resistant to the action of local anesthetics. There was one case in particular, which seems to me to fit in this category. He was to be operated for inguinal hernia, and made the statement before injection of the spinal anesthetic that it took more novocaine for him than for most people. He was given an average dose of spinal anesthetic, by what I thought was a satisfactory puncture, but developed no anesthesia. The operation was done under local novocaine infiltration, and it was true that it did require a greater amount of novocaine to anesthetize the tissues than with the average individual. I believe that most of the failures of spinal anesthetics are technical failures, or failures in judgment of type or quantity of anesthetic solution, but I also think that there may be a small group in whom it is due to an increased resistance to the action of the anesthetic drugs. Certainly the percentage of failures should decrease as the anesthetist gains in experience.

From my limited experience I have come to the conclusion that there are a number of groups of patients that I feel are better subjects for spinal anesthesia than for other types. I would like to briefly list these.

1. Those robust, heavily muscled individuals who are especially difficult patients for satisfactory

general anesthesia, particularly for the upper abdominal operations.

2. Cases of intestinal obstruction unless they are in extremely poor condition when any operative procedure more extensive than enterostomy under local infiltration would be fatal.
3. Surgery of the colon.
4. Ventral hernias, where the relaxation is such a great help to the operator. Inguinal and femoral hernias likewise are very conveniently done under spinal anesthesia, and when strangulated are much better done with spinal, as other types of intestinal obstruction.
5. Patients who are to have a prolonged operation, when a spinal may be given for the first part, anticipating that it will perhaps be necessary to use supplementary anesthesia for the last part.
6. For hemorrhoidectomy, anal fistula operations, and perineal plastics.
7. All prostatic obstructions, or surgery for bladder pathology.
8. Most operations on the kidney and ureter.
9. Operations below the diaphragm in the presence of any kidney pathology, diabetes mellitus, jaundice, hay fever or asthma.
10. In the case of suspected pulmonary pathology, or for those emergency operations which must be performed in the presence of some respiratory infection.
11. For those individuals who have taken a poor or unsatisfactory general anesthesia previously, or for those who are anxious to remain conscious during the operation.
12. A certain group of the aged patients. It is true that this is one of the fields where spinal anesthesia is dangerous, but oftentimes any other anesthesia is even more dangerous.
13. In a number of patients who are in too poor condition to take any other type. In this group we are sometimes forced to disregard factors that normally would be contraindications for spinal anesthesia, if it becomes a matter of necessity.

Maxson has expressed the indications very well when he states that spinal anesthesia is indicated for operations in which it "is more efficient or less dangerous than general and in which local anesthesia is either too arduous and time consuming or inefficient." Each case must be judged on its own merits, and there will be certain ones of the types enumerated above where some other factor will argue against spinal anesthesia, as there will be others not listed for whom it will seem advisable.

As there are types of patients who should have the benefits of spinal anesthesia, so there are some who should not be given this type of anesthesia if

any other can be safely used. Among these are the following:

1. Patients who are opposed to having a spinal, or those who want to go to sleep during the operation. I do not believe spinal should be forced upon any patient who does not want it, unless of course there is some really sound reason for its use other than the preference of the surgeon.
2. Any patients who have had trouble with their backs or legs in the past. Whatever complications or developments would follow would almost certainly be blamed on the spinal injection.
3. Patients with any disease of the central nervous system, including latent nervous system syphilis.
4. Any infection of the skin at the site where the puncture might be made, or the presence of a draining wound near enough so that there might be contamination of the skin from that wound. The introduction of any infection into the subarachnoid space is too great a calamity to take any chances of this sort.
5. It should not be used by the average surgeon or anesthetist for operations above the diaphragm. Total spinal anesthesia has been used (and intentionally) by some experienced men, but it is too hazardous for the average anesthetist to use—in fact I think it is probably too hazardous for an expert to use with the other anesthetics available today.
6. Hypotension and hypertension may be contraindications. However, there are some in my series with hypertensions as high as 230/110 and several with a systolic blood pressure of eighty-five or ninety mm. and they have undergone the operation without difficulty. The matter of control of blood pressure and the dangers which may accompany the extreme fall sometimes seen in the hypertensives should be considered, and carefully planned measures taken if it is to be used in these groups.

There are several "do's and don'ts" which I think are worthy of mention in order to avoid some unnecessary complications.

1. Always keep an anesthetist with the patient during the operation. A patient under the influence of a spinal anesthetic deserves the observation and attention of an anesthetist just as much as if he were asleep from a general anesthetic, and of course there is always the possibility that measures may be necessary to correct a fall in blood pressure or relieve other complications, as well as the ever-present possibility of needing a supplementary anesthetic.
2. Do not inject any air bubbles with anesthetic solution. This is not because the air itself is

harmful, for we know that large amounts of air are injected in encephalography, but an air bubble in the spinal canal, which runs up and down with the change in position of the patient causes a mixing of the spinal fluid and the anesthetic which is beyond control, and we lose completely the carefully calculated means of regulating the level of distribution of the anesthetic.

3. Use extreme care in technique to avoid infection of the subarachnoid space.
4. Do not inject the anesthetic if the spinal fluid is turbid.
5. Do not inject the anesthetic if the spinal fluid is bloody. In this case if the fluid will not flow clear after a rotation or slight change of position of the needle, make a new puncture in a different interspace.
6. Try to get a good flow of fluid from the needle. One which drips but cannot be aspirated freely may be satisfactory, but there is also a good chance that it will be a failure.

CONCLUSIONS

I believe that spinal anesthesia has an important role to play in surgical practice. I do not advocate it as an anesthetic to replace all others, but as one to be used when indicated and avoided when contraindicated. I believe that some patients can be carried through an operation under spinal anesthesia who would probably not make the grade under other types, and I believe that others can be operated with no more risk and with a smoother convalescence than with general anesthesia. I am firmly convinced that it is a mistake for a surgeon to feel that he can give a spinal and then operate without having anyone to watch his patient. The only exception would be the use of a sacral segmental spinal anesthesia, but a spinal is a true anesthetic just the same as ether, cyclopropane, or pentothal, and the patient who has had it should be under as careful observation as the patient under any other anesthesia.

A group of 400 consecutive cases has been studied to determine the efficiency of anesthesia, the undesirable side effects, and the complications. I feel that the results obtained in this group warrant its continued use, with the expectation that my experiences in these cases will make it possible to improve the results in subsequent uses of this type of anesthesia.

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If a doctor's life may not be a divine vocation, then no life is a vocation, and nothing is divine.—Stephen Paget.

THE RELATION OF THE STATE BOARD OF HEALTH TO THE PRIVATE MEDICAL PRACTITIONER*

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There is, inherently, the closest relation between the Kansas State Board of Health and the doctors of medicine in private practice in the state. When the state health department was established, by act of legislature in 1885, it was stipulated that the Governor, "With the advice and consent of the senate, shall appoint from different parts of the state nine physicians, who shall be men of good moral character and temperate habits, distinguished for their devotion to the study of medicine and allied sciences, of not less than seven years' continuous practice in their profession, and each of whom shall be a graduate of a reputable medical college; and said nine physicians, when so appointed and confirmed, shall be known as The Kansas State Board of Health¹."

From that time to the present the development of the state health department has been guided by the nine physician members, and a lay member who was later added to the board by act of the legislature, and who was to be, "one other person, not a member of the medical profession, (preferably an attorney interested in sanitary sciences.)"² These men have earnestly and conscientiously endeavored to put into practice a program designed to improve sanitary conditions, to foster health education, and to reduce the spread of communicable diseases.

The state department of health, through the action of its board members, has been developed in accordance with the advances made by medical science and with progressive methods evolved by leaders in public health in the field of preventive medicine.

In a recently published book, "Ways to Community Health Education", Dr. Ira V. Hiscock, Professor of Public Health, Yale University School of Medicine, says, "The force of a community health program is directly influenced by the strength of the health department's association with the medical profession. The wise health educator considers the physicians practicing in his community as outposts on the firing line in the battle for public health. They are in a position to serve effectively in public health education, and therefore should be provided

with ammunition. It is the health educator's duty to keep them supplied with information regarding public health programs, directly through medical society meetings and by special publications of the health department, and indirectly through the press and radio."³

This link, so close as to be inseparable, between the state health department and the physicians in private practice is not a modern idea—it is so old as to be basic, since, when the American Public Health Association was formed in 1872, Ravenel, in his book, "A Half Century of Public Health", said "No more opportune time could have been chosen for the formation of the American Public Health Association. The art of medicine was becoming the science of medicine; modern preventive medicine was being born. The discoveries of Pasteur had substituted the bed rock of science as a foundation on which has been erected the wonderful structure of medicine as it exists today."⁴ Ravenel also stated that modern public health practice may be said to have been born at the first meeting of the American Public Health Association in 1872. "Local Boards of health began to require reporting of the more important contagious diseases about 1870. Environmental sanitation became a secondary activity of the health department, and control of communicable disease a major function. Providence, Rhode Island, established the first diagnostic laboratory in 1888. New York City followed in 1894. Tuberculosis began to be recognized as a communicable disease and not a family taint, and was made reportable by health departments about 1895. Diphtheria antitoxin was introduced in 1894 and was adopted almost at once, with relatively little of the controversy that harasses so many of the important medical discoveries, before they became incorporated in public health procedure."⁵ This statement was made by Dr. Wilson G. Smillie, Professor of Public Health Administration in the Harvard School of Public Health. It is obvious that the close co-operation of the medical profession with their health departments was the basic requisite for accomplishing improvement in the health of individuals, and in the mass, public health. These two forces, working together for the good of the people they serve, have achieved a large measure of success.

Dr. Milton J. Rosenau, one of the distinctive authorities on public health today, formerly director of the Harvard School of Public Health and the Massachusetts Institute of Technology, says in his book, "Preventive Medicine and Hygiene," "Public health administration is the science and the art of organizing and operating governmental agencies whose purpose it is to improve the physical well-

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**Secretary, Kansas State Board of Health.

being of the general population. It aims at the promotion of health as well as the prevention of disease. It deals more particularly with mass phenomena of the community than with the problems of the individual, despite the fact that public health is the sum total of individual health."⁶ In the same chapter Doctor Rosenau also states that, "Public health administration is able to accomplish its basic functions only when under professional control. The entrance of politics as the controlling force is hazardous, and sometimes disastrous to a smoothly functioning organization . . . Public health should establish relations with medical, nursing, veterinary, engineering, and other professions. A good health program cannot succeed in face of opposition of the medical profession".⁷

We have cited the interdependence of public health work and that of the medical profession, as voiced by some of the national leaders in public health. Now let us consider the situation, as it has developed in Kansas.

When the state board of health was created, by act of legislature in 1885, the office consisted of a part of a room, and the personnel included the executive secretary and his stenographer. At present, the department is crowded into four large rooms in the state house, additional quarters for the central public health laboratory and the child hygiene division at 933 Kansas avenue, the division of sanitation headquarters at Kansas University, where the water laboratory is maintained, the food and drug laboratory service performed at Kansas University and Kansas State College, and the branch public health laboratory at Parsons. The employees of the state health department now number 168, and many of these people are voluntarily working overtime to keep up with the work of their various divisions.

Within the memory of many of us, the standards of the medical profession have been elevated. In 1910, the Carnegie Foundation for the Advancement of Teaching, published their Bulletin Number four, on "Medical Education in the United States and Canada". Speaking of educational prerequisites for doctors of medicine the report reads as follows, "The enforcement of even the four year high school standards will so far clean up the medical field that the state boards of medical examiners will at once be relieved of dealing with actually disreputable medical schools."⁸

In 1910, Kansas with a population of 1,663,438, had 2,650 physicians and three medical schools. The entrance requirement for the Kansas University School of Medicine was two years of college, and the attendance numbered eighty-nine. The Kansas Medical college which was established in Topeka

in 1890, required a four year high school course or its equivalent for entrance and the attendance in 1910, according to the Carnegie Foundation report,⁹ numbered sixty-five, with no full-time instructors in the school except in chemistry, which was taught at Washburn College. The third medical school in existence in Kansas in 1910, was the Western Electric College of Medicine and Surgery, which was organized as a stock company in 1898, with the entrance requirement defined as "nominal" and the enrollment stated as twenty-one, in 1910, by the Carnegie Foundation report.¹⁰

The foregoing excerpts from the published report are in no wise quoted to cast aspersions on the medical schools or the medical profession of thirty years ago—they are quoted to emphasize the healthy development and elevation of medical school standards in the state. The Kansas University School of Medicine is accredited by the American Medical Association; its entrance requirements include three years of pre-medical college work, with high scholastic standing, and enrollment is restricted to eighty-five students, although raising this number to ninety-five is being considered at present; the total enrollment for the year 1938-39 was 328 students, and the present year is approximately the same.¹¹ The development of this school of medicine has been wisely supervised, and it is an institution of which all Kansans may well be proud.

The growth of the state health department, as guided by its board members, has been greatly accelerated by the assistance, financial and advisory, of the United States Public Health Service and the Children's Bureau. Without this assistance, Kansas, with its appropriation of less than four cents per capita for public health administration, would be seriously crippled. This help from the United States Public Health Service and the Children's Bureau has been of direct benefit to the physicians of the state, and through them, to the public health. The promotion of milk sanitation; the equipment and extension of the services of the public health laboratories; the presentation of postgraduate courses in pediatrics and obstetrics, venereal disease, tuberculosis and cancer, all of which have been given by outstanding specialists in the various subjects, and were offered free of charge to all doctors of medicine in the state, with the state and local medical societies co-operating in making arrangements for the presentation of these courses; during the last year, drugs furnished free to Kansas physicians for treatment of their patients cost the state health department \$15,000; the department was able, through the assistance of federal funds, to make a direct grant of \$5,000 to the Kansas University School of Medi-

cine for research in osteomyelitis; the public health nursing service, which is strictly a health education unit; the purchase of baby incubators for loan to physicians in the care of premature infants; the training of department personnel for efficient service in public health, under which plan it has been possible not only to give this valuable special training to a number of Kansas nurses, but to some Kansas physicians who are now on the staff of the department. All of these activities of the state board of health have been coordinated with the health objectives of the medical profession. These services in no wise supplant the physician in private practice, but complement and augment the basic aim of the doctors of medicine—the improvement of the health of our people.

To demonstrate the foregoing statement more specifically, let us summarize the activities of the various divisions of the state board of health, and determine wherein they are allied with and dependent upon the co-operation of Kansas physicians in private practice.

The child hygiene division, the function of which is the promotion of child and maternal welfare, distributes a vast amount of free literature, upon request, with the Kansas Mother's Manual by far the most popular pamphlet. This manual, revised in 1936 with the assistance of obstetrician and pediatrician members of The Kansas State Medical Society is in constant demand—25,000 copies were requested in seventeen months—not only by expectant mothers, but by physicians who ordered the manual in lots of twenty-five or fifty copies. The Mother's Manual, as does all other health educational literature prepared in the health department, recommends the services of the family physician, stressing the importance of proper prenatal, natal and postnatal medical care for the expectant mother. The child hygiene division, through its nursing program, has assisted in providing full-time public health nurses in twenty-nine counties in Kansas, where the nurses (many of whom have been given special training in public health) work closely with the members of the county medical society, confining their efforts to health education. The postgraduate courses in pediatrics and obstetrics, mentioned previously, have been well received by the physicians in private practice throughout the state; following these courses, printed or mimeographed copies of the lectures were sent to physicians as reference material. A survey showed the lack of incubators for the care of premature infants in the state—and the child hygiene division purchased, and has placed to date a total of eighteen heat controlled and forty-six hot-water heat controlled incubators, in places of greatest

need. These incubators, placed usually in care of the county public health officer or nurse, are made freely available to physicians in private practice, and have shown a high record of infant survivals. One physician was much gratified to write to the child hygiene division, of the survival of a premature infant weighing less than thirty ounces at birth. Through the combined efforts of this division and the medical profession, maternal and infant death rates in Kansas are slowly declining.

The school health examinations, requested by the county superintendents of public instruction, and conducted with the approval and assistance of county medical societies, are inspections which bring to light many obvious defects. These inspections, in which local physicians assist and are compensated by state health department funds, are in no wise thorough medical examinations—no diagnoses are made and no treatment administered, but children in whom these defects are found are referred, through their parents, to the attention of their family physicians. The well-baby conferences are conducted on the same plan, with local physicians assisting and paid for their services. These programs placed the actual sum of approximately \$14,000 in the pockets of Kansas physicians last year, besides the unknown sums derived from suggestions made by public health workers that medical attention be sought from the family physician.

By the year-round health educational program, conducted through weekly and daily newspapers, the radio, talks by staff members, and in all publications of the state health department, the public is constantly advised to seek medical aid for any ailment or abnormal condition, to have periodic physical examinations by the family physicians, to safeguard their children by having protective treatments against diphtheria, smallpox and typhoid fever administered by their family physician. This instruction, reiterated year after year, has undoubtedly resulted in the addition of thousands of dollars annually to the income of Kansas physicians, and in the increased health, happiness and usefulness of the persons who sought medical care.

The division of communicable diseases is also closely allied with physicians in private practice, depending upon them for faithful reporting of various diseases, and, in turn, mailing to all physicians of the state, the weekly morbidity reports, by which are reflected health conditions in the state. These reports keep the medical profession constantly informed of health problems and progress. The communicable disease division furnishes diphtheria toxoid, smallpox and typhoid vaccine to all physicians, upon request. The city and county-wide diphtheria

immunization programs, sponsored by the state health department, have been successful because of the co-operation of county medical societies and local governing boards. The treatments are administered by local physicians, who are paid a nominal fee by the governing agency. This plan has resulted in the immunization of thousands of Kansas children each year, and the attendant publicity has prompted many parents to have the treatments administered to their children by family physicians. Results of the co-operation of the county medical societies with the state board of health are conclusively evidenced by Kansas morbidity and mortality reports on diphtheria: in 1921, 7,849 cases and 382 deaths were reported in the state, and in 1939 we had the all-time low of 257 cases with eight deaths. In 1939 alone, the state health department distributed to physicians sufficient toxoid to immunize 33,000 Kansas children. The state epidemiologist is at the service of physicians who think it advisable to have special investigation in cases or epidemics of communicable disease.

One of the basic activities of the health department is the registration of vital statistics, and the analysis of this data. The private medical practitioner determines the completeness and accuracy of the records of birth and death, and through them the status of health and population is determined. This information is relayed to physicians and to the public, and supplies the very basis of the health program.

The maintenance of a competent diagnostic and research laboratory, which manufactures such biologicals as are possible, is a mandatory function of the efficient health department, in the control of communicable diseases, and offers a medium of valuable service to physicians in private practice.

The division of tuberculosis control carries on a year-round program of education, strongly augmented by the school-wide tuberculin testing programs, which are conducted through the co-operation of the county medical societies, and which have resulted in the reference of many positive reactors to their family physicians for thorough examination. This program has not only brought to light active and incipient cases of tuberculosis, but has led to the discovery of the source of infection.

The encouraging increase in the number of venereal disease cases reported and placed under treatment in Kansas during the last few years, has been accomplished by assistance, financial and advisory, from the United States Public Health Service, and by the faithful co-operation of physicians in private practice, some of whom assist in the venereal disease clinics. Every doctor of medicine is aware of

the magnitude and seriousness of the venereal disease problem, in the nation as well as in Kansas. Obviously, the physicians in private practice comprise the key division, in the fight against venereal disease. The postgraduate courses in venereal disease, presented by distinguished members of The Kansas Medical Society, Dr. Arthur D. Gray and Dr. J. V. Van Cleve, have been well-received by the medical profession. The venereal disease control program has succeeded in bringing thousands of cases under treatment, in educating the public to consider syphilis and gonorrhea as infections rather than moral stigmas and to seek examination and treatment from the only reliable source—the doctor of medicine. The venereal disease clinics, approved by local medical societies and conducted by Kansas physicians who have made a specialty of the treatment of these diseases, are helping to solve the serious problem of checking venereal diseases in the medically indigent. The advances made so far have been made possible only by the co-operation of physicians in private practice, and can be carried forward until these diseases are under control, only with the continued support of the medical profession. The finest public health program, from the point of need and practicability, will fall to pieces completely, without the approval and help of physicians in private practice.

Side by side with the medical profession and the public health officer, in years gone by, the sanitary engineer, the food and drug inspector and the milk sanitarian, have performed their invaluable services in the protection and the improvement of the health of the people.

Through its division of local health, the establishment of full-time health departments, and the selection of personnel for special training in public health is effected. Several physicians practicing in the state, have been given this graduate training and, working with the local medical societies, are rendering valuable service in public health.

In recent years, tuberculosis has lost its traditional place as one of the ten leading causes of death. 1939 set a new low in deaths from scarlet fever, pneumonia, whooping cough, diphtheria and tuberculosis. Maternal and infant deaths are declining. Accidental deaths are gradually being reduced. Schools, civic and social groups—the public, as individuals and in the mass, is intelligently interested in health education. This upward trend in health conditions could only have been effected by the close co-operation and mutual support of the physicians of Kansas and the state health department.

As secretary of the state board of health, and in

behalf of your colleagues, the board members, I wish to take this opportunity to thank the medical profession of Kansas for its sustained and loyal assistance in the health programs projected by the state health department, and to express the sincere hope that this relation may always prevail.

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ARTHRITIS—THE GREAT RESPONSIBILITY AND OPPORTUNITY*

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Because of the nature, prevalence and economic toll of arthritis and related diseases, they constitute a major responsibility and opportunity for medical men and laymen alike.^{1,2}

This discussion relates solely to needy patients and is not concerned in the slightest degree with those who are financially able to pay for medical services.

The need for an arthritis campaign is both definite and urgent and as a highly important aspect of the nation's health we believe that the responsibility for the operating activities of such a campaign properly belongs to existing official public health units (state, county and municipal), rather than to local or national special voluntary associations.

The reason for this point of view do not cast the slightest reflection upon the established excellence of either the American Rheumatism Association or the American Association for the Study of Arthritis and are based solely and entirely upon the concept that the nation's health is a single interest with different aspects. Obviously a successful arthritis movement will of necessity require a high degree of co-operation from these and other voluntary groups.

The development of a campaign against arthritis and the problems of research, early diagnosis, preven-

tion, hospitalization, etc., are therefore considered primarily from an organizational viewpoint.

BACKGROUND OF THE PROBLEM

Besides the rather wide spread impression among the laity that "almost everybody just has to have more or less arthritis sooner or later,"¹ there is also the equally general and erroneous idea that the members of the regular medical profession haven't much to offer by way of successful treatment. In fact, it is this combination of fallacious assumptions that furnishes a great deal of the background of the problem.

About fifty per cent of all patients who suffer from any chronic disease turn to chiropractors, naturopaths, patent medicine vendors, etc.; but in our study of 343 cases of atrophic arthritis³ approximately seventy-five per cent "took flyers" in these directions. This aspect of the situation, which has its roots in a profound degree of scepticism, is one of the greatest deterrents to progress.

STATISTICAL HIGHLIGHTS

There are more sufferers from rheumatic diseases than from the combination of heart disease, cancer and tuberculosis. Moreover, among chronic diseases in this country, arthritis and rheumatic diseases not only rank first in prevalence, but also hold second place for disability and invalidity.¹

The average duration of lung tuberculosis is only about three years, cancer exacts its toll, as a rule, in one-half of this period; but, invalidity from arthritis often extends over twenty or thirty years.⁴

STAGES OF THE CAMPAIGN

The stages in the development of successful social movements—including the conquest of arthritis—are well known and may be termed: (1) Investigation, (2) Agitation, (3) Organization and (4) Co-ordination.

In the first stage (investigation), the fundamental and essential roles of scientific and statistical research are clearly apparent; and much has already been done by way of accumulating information regarding the nature and extent of the problem with which we are confronted. Its devastating economic consequences are also known.¹

The second stage (agitation), relates to the ways and means by which publicity is carried out and the support and interest of individuals and groups—both lay and professional—are solicited.

ORGANIZATION

When we come to the third stage (organization), we must make up our minds about the functions and responsibilities of official health bodies versus those of voluntary associations.

One of the great arguments in favor of separate associations with special interests has always been

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that we Americans are only reactive to spectacular catastrophies and disasters. Tuberculosis, by way of example, with its former high death rate and alarming incidence offered an outstanding opportunity for intensive efforts in this special field. One of the reasons why the National Tuberculosis Association promptly developed so much highly specialized momentum was the number of deaths in all strata of society coupled with propaganda to the effect that "no one ever died of Public Health."

At least this particular line of reasoning cannot be logically advanced as a justification for a National Arthritis Association because the deaths from arthritis and all forms of rheumatic disease are only about four per 100,000 persons.⁴ Moreover, it is not a communicable disease.

It would seem logical to assume that the interest of any group or community should be the promotion of health in the most effective and economical manner. But when the organizational set-up involves divided authority and responsibility among separate groups with special interests, these different associations are in the position of business concerns that audit their own books. In their appeals for moral and financial support and in their publicity campaigns to keep the public informed of their achievements, their claims are quite naturally based upon their own evaluations of their own particular accomplishments.

It may be granted that the stages of investigation and agitation of any great social undertaking may be carried on with greater speed under the auspices of separate national voluntary organizations and without serious impairment of either efficiency or economy; but when strong independent associations have been built up, coordination can only be accomplished with great difficulty, if at all.

It would therefore seem to be of fundamental importance that the development and evolution of the campaign against arthritis and rheumatic diseases be visualized from the start as merely another aspect of a single interest—the nation's health—so that from the viewpoint of organization and coordination nothing will stand in the way of the advancement of efficiency, economy and the public welfare. Swift has expressed a similar opinion with regard to rheumatic fever.⁶

COORDINATION

Whatever may be the procedure with regard to the stages of investigation and agitation, let us consider briefly the possibilities and advantages of developing the organizational and the coordinative aspects of the arthritis movement under existing health agencies.

In the first place, it has been clearly demonstrated

that dietary indiscretions, defects in personal hygiene, occupational factors, exposure to dampness and cold, poor housing conditions, worry, fatigue and a long list of other causes merit consideration,⁵ both individually and collectively, with diseased tonsils and other infections, to the end that the problems of prevention and treatment lead us into the fields of physiology, chemistry, mechanics, economics, hygiene, housing, sanitation, etc.

From such a wide range of diverse causal factors it becomes obvious that, at least from the viewpoint of preventive measures, benefits would by no means be limited to a reduction in the incidence of arthritis and rheumatic diseases. Moreover, it has been amply demonstrated by health authorities in this country and abroad that such dissimilar clinical entities as arthritis, tuberculosis, pneumonia and enteritis have a common dependence upon the social and economic backgrounds of their victims.

Also, it has been the experience of many health officials that the greater the progress toward the eradication of any special disease, the more evident has become the relationship of that particular achievement to other health problems and the more apparent has become the fact that the health of the community is in reality a single interest with different aspects.

The advantages of a unified program would not appear to require further comment and the practical application of this idea or principle is now before us.

PRINCIPLES

Regardless of variations in the details of the ways and means for improving the nation's health, it is generally recognized that the health of the people is a direct concern of government—both local and national. Moreover, the principle that the care of the public health is primarily a local responsibility is beyond all question; and means that in the establishment of policies as well as in their administration this obligation must not be neglected.

We need not concern ourselves here with the outcome of the different efforts toward the establishment of what is referred to as "Socialized Medicine" or "State Medicine"; nor do we need to enter upon a detailed consideration of the division of the nation's health into its precise percentages of public health and private health.

Furthermore, there would seem to be no serious conflict of opinion with reference to the following:

First, changes in economic and social conditions at home and abroad demonstrate that medicine must be mobile and not static.

Second, the problems of both private and public health are of vital concern to economists and sociolo-

gists as well as to the practicing physicians and health officials.

Third, throughout our forty-eight states there are sufficient variations in the climatic, economic and social conditions to justify the conviction that no single plan for the advancement of the nation's health would be either desirable or feasible.

Fourth, whatever changes in the present system may be ultimately adopted, the transitions should be gradual and based on demonstrated needs.

Fifth, and lastly, the closest cooperation financially and otherwise of voluntary agencies, local, state and federal governments is a fundamental necessity.

Now, all of these broad generalizations upon the subject of private and public health not only have a direct relationship to the arthritis problem—which is merely one aspect of the health situation—but also, the most effective and economical organization to combat arthritis must be based upon these concepts.

Physicians have already urged the appropriation and allotment of funds for campaigns against maternal mortality, venereal disease and cancer; therefore they would not oppose similar financial grants for a campaign against arthritis.

It is true that some states have sought financial aid in the absence of demonstrated needs proportional to the amount of the funds solicited; but legislation is specific upon the point that Congress has the power to require that appropriations be allotted only upon the presentation of proof of actual need.

Fundamentally, it is in connection with the principle that the care of the public health is primarily a local responsibility that the greatest possibilities of trouble—as well as advantage—are to be found.

When individual states, or any of their composite units demand that the federal government take over the financing of any of their problems—whether it be improving their streets or their health—it obviously follows that politics will play a dominant role in the expenditure of such allotments. And no one can logically take issue with the politicians whenever this happens.

In accepting the principle of local responsibility no community can successfully dodge the economic obligation that is entailed.

SPECIAL ASPECTS OF ARTHRITIS

It is customary to emphasize the analogies between the arthritis and tuberculosis problems—which closely parallel one another in many ways; but, in doing this we must keep clearly in mind that another special voluntary national association is not the answer from the viewpoint of procedure.

Arthritis and rheumatic diseases are characterized by about the same degree of universality as tuber-

culosis. Even animals are subject to arthritis and many species are known to have been its victims. Among members of the human race, no individual seems to be either too young or too old to be out of range.

CLINICAL TYPES

In somewhat the same way that the clinical type of tuberculosis varies in infants, juveniles and adults, we find that arthritis and rheumatic diseases are characterized by variations in their manifestations for different age groups.

While middle-aged adults are not immune to acute rheumatic fever, it is, nevertheless, more common in children who also have a modified type of infectious arthritis that is called "Still's disease."

Crippling and deforming rheumatoid or infectious arthritis is more generally prevalent before age forty-five than later,³ but it is by no means exclusively limited to patients in the younger age groups; and like tuberculosis, it is particularly prone to affect those who are not in vigorous health.

Osteo-arthritis and gout are the varieties that are ordinarily found after middle age.

RESEARCH

In every phase of medical practice, continued progress is inseparably linked with both scientific and clinical investigation, and arthritis and rheumatic diseases are not exceptions to this postulate. At the present time there are entirely too meagre funds available and for too few institutions devoted to research in arthritis.

EARLY DIAGNOSIS

It would be utterly trite to amplify an aspect of the problem that is so obvious.

Even though it is clear why early diagnosis is fundamentally important, it may not be so obvious as to how these diagnoses are going to be turned out on a sufficiently big scale to meet the demands of the situation.

With several times as many millions of arthritics as there ever were tuberculous victims, the difficulties of the arthritis problem are infinitely greater.

It is clearly apparent that we should have the same degree of teamwork between general practitioners and specialists as pertains in individual instances for other diseases; but the vast number of arthritics in the United States precludes any solution to the problem of early diagnosis unless the general practitioner is cast for the leading role.

PREVENTIVE MEASURES

There is some question as to how intensively preventive measures should be developed solely as a part of the arthritis campaign, *per se*.

It has already been pointed out that activities of a preventive character (in addition to embodying

personal elements relating to individual patients), are concerned with hygiene, economics, housing, sanitation, etc.

It would appear, therefore, that the prevention of arthritis and rheumatic diseases is in reality just another aspect of the community health problem and should be so regarded from an organizational point of view.

In this connection, as well as in the matter of hospitalization, it should be borne in mind that there are at least fifty per cent more patients in the lower income brackets than among the well-to-do.

HOSPITAL CARE

Attention has been called by Snyder² to the lack of hospital facilities for patients with chronic arthritis. General hospitals and private institutions are equally bereft of free beds for these patients; and such beds probably do not number more than a couple of hundred throughout the United States in comparison with more than 100,000 for patients with tuberculosis.²

At first sight, this situation seems to reflect an astounding degree of indifference and neglect without any mitigating factors or circumstances. However, the frequently mentioned analogy between arthritis and tuberculosis does not and should not apply to the matter of hospitalization. In the first place, it is highly important to recognize the difference between chronic arthritics—who are mechanically disabled and not ill in the strict sense of the word—and patients with tuberculosis who are not only sick, but also are suffering from a communicable disease.

Arthritics, who are seen in the early stages, are not, as a rule, benefited by prolonged periods of institutional treatment. Unlike the tuberculous, for whom months of rest are often necessary in order to bring about quiescence and arrest, the average arthritic is a most satisfactory ambulatory patient. And, in connection with the diagnosis and treatment of ambulatory arthritics, the American Rheumatism Association has established Minimal Standard Requirements for Arthritis Clinics.

The question of hospital care for chronic arthritics is not an urgent problem of providing tens of thousands of free beds as a fundamental factor of prevention and treatment, but merely a part of the well-rounded institutional program of every community for the hospitalization of its needy and disabled.

SUMMARY

The stages of a campaign against arthritis have been outlined. Its organization is predicated upon the concept that the health of a community is fundamentally a single interest with different aspects and that the primary responsibility therefore belongs

to official public health agencies. The fact that dissimilar diseases (among which may be mentioned arthritis, tuberculosis, pneumonia and enteritis), have a common dependence upon similar social and economic backgrounds would seem to support this point of view. Throughout the United States under state, county and municipal health authorities, numerous clinics already exist and they should serve as the basis for the arthritis campaign.

The principles of the procedure, regarding which no serious differences of opinion seem to exist, have been noted and some of the special aspects of the arthritis problem have been considered.

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THE NON-EFFECTIVENESS OF METRAZOL THERAPY IN THE TREATMENT OF SCHIZOPHRENIA (DEMENTIA PRAECOX)

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When von Meduna first proposed the convulsive shock therapy for the treatment of schizophrenia (dementia praecox), he made certain claims as to its effectiveness which have not been confirmed by the experiences of investigators and observers during the past five years. At the time that the treatment was first proposed, schizophrenia was considered to be a chronic, more or less progressive and usually hopeless condition. This attitude was confirmed by numerous reports such as Fuller's¹, who showed that only 18.5 per cent of a large group of patients with this disease had been discharged from a mental hospital within one year, and 24.2 per cent had been discharged in two years. Romano and Ebaugh² made a careful study of this problem. They analyzed the present state of 600 patients who had been diagnosed schizophrenic in the psychopathic department of the Colorado General Hospital between the years 1933 and 1936, and concluded that:

"At the present time the prognosis of the schizophrenic psychoses is very poorly understood. It is apparent that this is due to their heterogeneity; the unreliability of the various catamnestic studies, most of which are based on social criteria; and the lack of reliable prognostic criteria in the individual cases. We have attempted to point out a number of variables that can and should be controlled in order to gain further and clearer insight into the natural course of the schizophrenic disorders."

As a result of their studies, they found that only one patient out of the 314 examined had a complete remission, and only twenty-two showed marked improvement (0.32 per cent and 7.01 per cent, respectively). Of the 600, information was obtained from 454, of whom 247, or 54.4 per cent, were in a psychopathic hospital. Of the 45.6 per cent who were not in a hospital, many had shown no improvement. A percentage of 7.33 might be taken as their figure of good results which had been obtained by therapeutic measures of a non-shock type: rest, seclusion, diet, support, occupational, recreational, physical, and psychotherapy.

Strecker³ analyzed many previous reports on the results of non-shock procedures, and found that these results, as reported, varied from 3.4 to forty-eight per cent well or improved at the time of discharge, or an average of 23.6 per cent of a combined series of 2,460 cases.

The criticism of these reports is aptly expressed by the quotation from Ebaugh and Romano given above. Markedly different criteria must have been used to have obtained such a wide variation of results.

Whitehead⁴ points out that twenty-five per cent of schizophrenic patients admitted to the Utica State Hospital before the use of insulin and metrazol had spontaneous remissions, although most of these relapsed. Gelperin⁵, in a recent report on 235 cases, gave a statistical summary of forty per cent improved to the point where they could be discharged. He does not break this up into remissions, marked and slight improvement, and his findings are superior to those of Romano and Ebaugh. If we add their (Romano and Ebaugh) group of slightly improved cases to the above figure of 7.33 per cent, we get 23.57 per cent that showed some improvement. Romano's and Ebaugh's series is a several years' follow-up, while Gelperin's is for immediate discharge.

Thus it would seem that the statistical average for improvement from non-shock therapy, in patients who had been out of the hospital for some time, should be somewhere around twenty-five per cent. These patients are not all well, but are simply well enough to be home.

Any procedure must have seemed an improve-

ment even if it helped the situation only slightly or reduced the chronicity. It is the consensus of opinion that metrazol does produce a rapid, apparent improvement in many cases, but these results are of poor quality and not sustained.

Eisner and Orbison⁶ reported upon the results of personality evaluation (Rorschach method) upon thirty-eight patients who were tested before and after their courses of metrazol shock. They concluded that while these patients showed a superficial clinical improvement, the Rorschach evaluation did not parallel this, but showed that fundamentally these patients were still schizophrenics.

During the past four years certain reports have been released which show that metrazol convulsive shock is not a satisfactory or effective treatment for schizophrenia. Ross and Malzberg⁷ concluded that metrazol, on the other hand, produced even fewer recovered cases (1.6 per cent recovered and 9.9 per cent much improved of a total metrazol treated series of 1140 patients) than found in cases not treated by any shock therapy. (Control series of 3.5 per cent recovered, 11.2 per cent much improved.) This was confirmed by a cooperative report on 759 patients, recently published in Germany⁸, analyzing 560 treated with insulin, 132 with metrazol, and sixty-seven with both. The insulin series showed 37.7 per cent symptom-free and 28.9 per cent improved. The metrazol series showed 18.9 per cent symptom-free and 37.1 per cent improved. Menninger⁹ in a recent article reports that only seventeen per cent of his series of schizophrenics showed a social remission after a course of metrazol therapy. The results following metrazol treatment are actually lower than many figures for spontaneous remission, and we at the Neurological Hospital have practically discontinued its use as the sole agent.

The results at the Neurological Hospital showed in a series of twelve patients that three made a complete recovery, two showed enough improvement to go home, three improved slightly, and four did not improve at all. However, only two of these patients have maintained their improvement, so that we find that eighty-five per cent of this series is in a state hospital or at home, completely incapacitated. Since these patients were treated some months ago during the period when metrazol was being tried extensively, enough time has elapsed to prove that in this small series metrazol is not an effective treatment in schizophrenia if sustained results are desired. These discouraging results plus the above reports led to the discontinuing of this form of shock therapy in schizophrenia at the Neurological Hospital.

Metrazol still has a place in psychiatric therapy. It is almost as specific in the treatment of the affec-

tive psychoses, such as involuntional melancholia and the agitative-depressive group. Without shock therapy, only thirty per cent of this group can be expected to recover after a period of illness of from one and one-half to three years. With metrazol, seventy per cent make a complete, sustained recovery, lasting in our series for well over a year, and twenty-five per cent show a marked improvement, so that they are well enough to go home and live a life of at least ninety per cent efficiency. These results are obtained in from four to eight weeks of hospitalization and metrazol therapy.

Insulin shock results in schizophrenia show that 37.3 per cent of all cases treated are well enough to be in the community, after two years have elapsed from the time their treatment was terminated. Of those treated during their first six months of illness, 61.5 per cent are still in the community, while those who were treated during the second six months, 47.7 per cent are still in the community. These figures are from Ross¹⁰, group of 1039 cases treated during 1937 and 1938. Ross and Malzberg's⁷ conclusions are significant. "This recovery and improvement rate in the cases of insulin-treated cases is significantly in excess of the rate of the control group." (1,757 cases in the group who were treated with insulin.)

SUMMARY

Published reports, statistical analysis and numerous observations show that metrazol convulsive shock is not beneficial or helpful in the treatment of schizophrenia. It should never be used as the sole agent. It does, perhaps, have some value as an adjunct to insulin shock in certain patients who have a marked depressive content in their total psychotic picture. Insulin shock is the treatment of choice in the management of schizophrenia.

Metrazol does have a valuable place in the handling of those psychotic syndromes which are characterized by marked changes in the mood (affective disorders) and should be used when other more conservative measures have failed. Insulin shock, on the other hand, apparently is not especially beneficial in these cases.

Psychiatry does not differ from other branches of medicine. An exact diagnosis is a prerequisite to any form of therapy. In light of recent developments and observations, it would seem that an exact diagnosis of the psychiatric disorder is of extreme importance in order that mistakes in selecting the proper therapy will not be made. Inaccurate diagnoses with resulting improper application of a therapeutic procedure will give a poor clinical result. These poor results lead to an unjustifiable loss of confidence in procedures which when properly ap-

plied to the right cases give relatively excellent results.

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LYMPHOSARCOMA INVOLVING THE EPIDURAL SPACE*

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Since anyone of the so-called "Lymphomatoid Diseases" is rarely encountered in the spinal epidural space, it was thought that the report of such a case might be of interest. It is of special interest when there is, as in this case, no clinical or roentgenographic evidence of any primary growth elsewhere before the development of spinal cord symptoms.

Generally speaking, malignant tumors may reach the epidural space from other areas by various routes as (1) by direct invasion from a contiguous involvement of bone, (2) by extension thru the intervertebral foramina, or (3) by hematogenous, and possibly lymphogenous, implantation from distant sources.

How can the so-called lymphomatoid diseases gain entrance to the epidural space? Apparently the most plausible explanation is that of extension from regional lymph nodes thru the intervertebral foramina. However, we cannot completely rule out the possibility of their arising primarily from small foci of lymphoid elements in the epidural space.

Guillain, Alajouanine and Perisson¹ claimed to be the first to report lymphosarcomatous involvement of the spinal cord. In their case there was an extra-

*Presented at a meeting of the Kansas Section of the American College of Physicians, November 18, 1939.

medullary mass compressing the spinal cord with resulting paraplegia. However, the spinal lesion in this case was considered secondary and not primary in the epidural space.

Davison and Michaels² have reported seven cases of lymphosarcoma in which the central nervous system was involved secondarily.

Browder and de Veer³ reported sixteen cases of malignant epidural tumors in each of which the initial symptoms were those of compression of the spinal cord or cauda equina. Also, in these cases, clinical and roentgenographic examination failed to disclose evidence that the lesion was not primary in the vertebral canal. Among their sixteen cases there were four cases of carcinoma, eight cases of lymphosarcoma, and one example each of giant follicular lymphadenoma, reticulum cell sarcoma, plasma cell myeloma and Hodgkin's disease. Most of these come under the group designated by Krumbhaar⁴ as "Lymphomatoid diseases." Under this heading he included the following conditions: Lymphosarcoma, leukosarcoma, lymphatic leukemia, reticulum cell sarcoma, aleukemic reticulosis, Hodgkin's disease, granuloma fungoides, Mikulicz's disease, and allied states as agranulocytosis, monoblastic and monocytic leukemias, Cooley's erythroblastic anemia, infectious hemolytic anemia, and von Jaksch's disease.

These lymphomatoid diseases are practically all alike in having a fatal prognosis, though the duration may extend from few days to many years. The very great majority of these are very susceptible to radiation.

REPORT OF CASE

A white female, age fifty-one, was first seen on February 19, 1939, referred by Dr. Christman of Pratt, Kansas. She complained of paralysis of both legs and pain in the region of both shoulder blades.

She had been well until April 11, 1938, when she first noticed pain in the upper thoracic region posteriorly which has been present up to time of examination. She remained otherwise well until January 18, 1939, when she noticed numbness in both lower extremities followed by gradual progressive weakness until she lost practically all power of motion in the lower extremities. She had no sphincter disturbances at any time.

Examination: There was a bilateral spastic paralysis of both lower extremities with pathological reflexes and ankle clonus bilaterally. There was a level of hyperalgesia at the third thoracic spine. Passive motion and muscle position sense was lost in both lower extremities. Vibration sense was absent over the left lower extremity. Temperature and pain perception were disturbed on both sides below the sensory level. There was tenderness over the third and fourth thoracic spinous processes. The abdomen was distended.

Spinal puncture revealed a clear fluid with an initial pressure of nine mm. Hg. which on bilateral jugular compression rose slowly to 11.5 mm. and came

down very gradually to nine mm. The cell count was one; and there was a slight trace of globulin; total protein was seventy-eight mgm. per 100 c.c.

Examination of the blood showed 4,350,000 red and 8,150 white cells per cubic millimeter. The hemoglobin was 13.9 grams and the differential count was normal.

The clinical diagnosis was spinal cord tumor at level of second thoracic spinal cord segment.

First Operation: On February 21, 1939, a laminectomy of the second, third and fourth thoracic vertebrae was performed by Dr. Hibbard. There were three lesions visible in the epidural space. At the level of the third and fourth thoracic vertebrae respectively there was a thick fibrous band of hypertrophied ligamentum flavum compressing the cord. Then, above these at the level of the second thoracic vertebra there was a grayish-black tumor mass lying on the dorsolateral surface of the spinal cord, compressing it. This tumor was about the width of half the index finger and was about two inches in length. The two fibrous lesions and as much of the tumor as could be seen were removed. No intradural lesions were present.

Histologically, the tumor growth was composed of cords and masses of round cells of small size. The nuclei were round or oval and very darkly staining. The protoplasm was unstained in most cells. The cellular strands were separated by thick fibrous septae. Blood vessels were thin walled and numerous. Diagnosis—Lymphosarcoma.

Course: Three weeks after the operation she received 200 r units daily over the upper thoracic spine until she had received a total of 4000 r units. She made an uneventful recovery and gradually regained function of her legs so that she was able to walk without support.

Three months after the above operation there developed a large and painless swelling in the region of the right parotid gland.

Second operation: The greater portion of this mass was removed from the region of the right parotid gland.

Histologic examination of this parotid mass showed, first of all, a small area of normal parotid tissue. Secondly, there was a type of structure which had the appearance of a mixed tumor of the parotid, being composed of strands of small cells separated by bands of fibrous tissue. Thirdly, large groups of round cells were seen, for the most part in the parietal lobules.

The microscopic diagnosis was: 1. Mixed tumor of parotid. 2. Lymphosarcoma.

Further Course: Following this second operation she received another course of x-ray. At this time 300 r units were given over the right parotid region for nine successive doses, making a total of 2700 r units.

She was apparently doing well until three months later when she developed a soft elevated mass over the sacrum which was considered to be metastatic in origin. For this she received another course of x-ray. This time a total of 2700 r units were given.

Two months later this mass had disappeared but she developed large masses in the abdomen which were considered to be enlarged lymph nodes. A total of 2000 r units were given over the epigastrium.

She died on November 20, 1940.

(Continued on Page 222)

President's Page

To the Members of The Kansas Medical Society:


In beginning another year of Kansas Medicine, I wish to express my appreciation of the honor bestowed upon me as your President. Let us all, as officers and members of The Kansas Medical Society, pledge ourselves anew in loyalty to our local, state and national societies in the effort to maintain the highest standard of medical and surgical practice in our state and nation.

Many are our state and local problems that will require continuous effort on the part of all. Let us not become passive because of apparent past successes in a few of many problems that confront us as an organized professional group. Naming a few to refresh our minds: The medical defense program; care of the indigent; care of the low-income group; lay educational efforts further to reduce the morbidity and mortality, in our population, as pertains to cancer, tuberculosis, heart disease, and others that might be mentioned; the immunization field in preventive medicine; the improvement in maternal and child welfare; the eradication and control of venereal disease and other fields worthy of our most careful consideration. May we continue the program of post graduate study so ably carried on in the past years, and if possible enlarge upon this field of self-improvement.

To the membership group—may you feel free at all times to offer suggestions, through your Councilors and Delegates, as to policies and procedures culminating in state-wide improvement in medical practice.

I assure you of my untiring effort throughout the year and for the officers let me also bespeak the assurance that they will, during this year as in the past, through the sacrifice of time and material loss be ready at all times through the medium of timely councils to shape the policies of our Society and further elevate the plane of medical practice in our state.

Sincerely,

A handwritten signature in cursive script, reading "Clyde O. Blake M.D.", written in dark ink.

President, The Kansas Medical Society.

EDITORIAL

PRESIDENT-ELECT

The Society welcomes Dr. Henry N. Tihen of Wichita, as its President-Elect for 1942-43. Dr. Tihen is particularly experienced and well informed concerning the work of the Society. He served as its first Vice-President during the year 1940-41; as Councilor of the Sixth District for two terms; as Chairman of the Executive Secretary Committee during the several years of its existence; as Chairman of the Society Committee on Control of Tuberculosis for the past four years; and has assisted and taken part in numerous other functions of the organization. This experience coupled with his general ability and his knowledge of Kansas medical affairs and problems equips him well to accept the important responsibilities of his year as President in 1942-43. The Society has in its election of Dr. Tihen made a worthy addition to its long line of capable and efficient Presidents.

ANNUAL MEETING

The 82nd Annual Session held in Topeka from May 12 to May 15 was one of the best meetings the Society has ever held.

The registration of 921, the attendance at the scientific sessions and other events, and the interest in the technical and scientific exhibits were particularly excellent.

The arrangements and facilities were well prepared, and the meeting as a whole moved with the smoothness and efficiency which results only through long and careful planning by committees.

The scientific program consisted of 39 papers presented by 29 speakers, and its excellence is indicated by the fact that all of the sessions including the first morning and the last afternoon were crowded at all times.

The plan of holding the election meeting of the House of Delegates at 4:00 p.m. on the last day seems to have solved a major problem which has existed at Kansas meetings for many years. At any rate, that session of the House of Delegates was well

attended and interference of the House of Delegates meetings with the scientific program was completely eliminated.

The technical exhibits consisted of the following:

Westinghouse X-Ray Co., Inc., Long Island, N. Y.
 William S. Merrell Company, Cincinnati, Ohio.
 American Optical Company, Topeka
 A. S. Aloe Company, St. Louis, Mo.
 Merck & Company, Rahway, N. J.
 M. & R. Dietetic Laboratories, Inc., Columbus, Ohio.
 American Hospital Supply Corporation, Chicago, Ill.
 Archer-Taylor Drug Company, Wichita.
 John Wyeth & Brothers, Inc., Philadelphia, Pa.
 Thacher Supply & Equipment Co., Inc., Topeka
 Coca-Cola Company, Atlanta, Ga.
 Lederle Laboratories, Inc., New York, N. Y.
 Gerry Optical Company, Kansas City, Mo.
 Cole Chemical Company, St. Louis, Mo.
 The Borden Company, New York, N. Y.
 Medical Protective Company, Fort Wayne, Ind.
 Mid-West Surgical Supply Co., Inc., Wichita.
 J. B. Lippincott Company, Philadelphia, Pa.
 H. G. Fisher & Co., Chicago, Ill.
 W. E. Isle Company, Kansas City, Mo.
 The C. V. Mosby Co., St. Louis, Mo.
 Parke, Davis & Company, Detroit, Mich.
 Petrolagar Laboratories, Chicago, Ill.
 Quinton-Duffens Optical Company, Topeka
 Abbott Laboratories, North Chicago, Ill.
 A. J. Griner Company, Kansas City, Mo.
 Eli Lilly & Company, Indianapolis, Ind.
 Greb X-Ray Corporation, Kansas City, Mo.
 Gerber Products Company, Fremont, Neb.
 Zemmer Company, Pittsburg, Pa.
 Geotze-Niemer, Topeka
 Riggs Optical Company, Kansas City, Mo.
 Holland-Rantos Company, Inc., New York, N. Y.
 Mead Johnson & Company, Evansville, Ind.
 General Electric X-Ray Corp., Chicago, Ill.
 Lea & Febiger, Publishers, Philadelphia, Pa.
 The Mennen Company, Newark, N. J.
 McIntosh Electric Corporation, Chicago, Ill.
 C. B. Fleet Company, Inc., St. Louis, Mo.
 E. R. Squibb & Sons, New York, N. Y.
 Smith, Kline & French Laboratories, Philadelphia, Pa.
 DeVilbiss Company, Toledo, Ohio
 Burroughs Wellcome & Co., Inc., New York, N. Y.
 J. R. Siebrandt Mfg. Co., Kansas City, Mo.

The Society appreciates very much their generous interest and support of the meeting.

The ladies registration totaled 189 and the events for women were well attended. Likewise, good attendance was also had at the Secretaries Conference, the meeting of the Kansas Obstetrical and Gynecological Society, the Kansas Heart Association meeting, the events of the eye, ear, nose and throat section and other specialty events, and the meeting of the Kansas Medical Assistants Society which registered 187 at its second annual session.

New officials elected at the meeting were as follows:

President-Elect—Dr. Henry Tihen, Wichita
 First Vice-President—Dr. J. L. Lattimore, Topeka
 Second Vice-President—Dr. Marion Trueheart, Sterling
 Secretary—Dr. John M. Porter, Concordia
 Treasurer—Dr. Geo. M. Gray, Kansas City
 Councilor for the Fourth District—Dr. Philip W. Morgan, Emporia
 Councilor for the Fifth District—Dr. John L. Grove, Newton
 Councilor for the Ninth District—Dr. J. H. A. Peck, St. Francis
 Councilor for the Eleventh District—Dr. Herbert Atkins, Pratt
 Delegate to the American Medical Association for 1941, Delegate-Elect for 1942 and 1943—Dr. F. L. Loveland, Topeka

Kansas takes pride in the fact that it has one of the best state meetings in the country and it is hoped that Dr. J. L. Lattimore, Dr. L. L. Saylor, Dr. W. H. Weidling, Dr. O. R. Clark, Dr. L. A. Smith, Dr. E. H. Decker, Dr. H. L. Kirkpatrick, Dr. L. E. Eckles, Dr. Guy Finney, Dr. H. L. Clark, Dr. L. R. Pyle, and the other members of the Shawnee County Medical Society committees may feel repaid by the universal compliments received concerning the meeting for the large amount of time and effort they gave in that connection.

AMERICAN MEDICAL ASSOCIATION MEETING

The annual session of the American Medical Association will be held at Cleveland, Ohio, from Monday, June 2, to Friday, June 6.

The detailed program, which has been published in recent issues of the Journal of the American Medical Association, will include information of value for every physician and will be of equal interest to specialists and general practitioners. Likewise, in the scientific exhibits and technical exhibits is extended an excellent opportunity to obtain post-graduate information.

The annual session of the American Medical Association is the greatest scientific meeting in the World. Every physician owes it to himself and to his patients to attend as many American Medical Association meetings as he finds possible. Since this year's session is easily accessible to Kansas physicians, it is hoped that the registration from this state will be particularly large.

MEDICAL ECONOMICS

PREPAYMENT PLANS*

Inasmuch as the hospital prepayment plan in Iowa has been supported by the Iowa State Medical Society it would seem that an occasional report of its progress would be in order. The plan is progressing very satisfactorily, and is rapidly expanding to offer its services to a larger portion of the state. On the first of October there were hospital members in thirty-six communities, and definite promotion has been carried on in eight of these towns. After the work was well established in Des Moines, offices were opened in Cedar Rapids and Dubuque, since these three communities furnished the major portion of the funds to start operation of the plan. Since then Burlington, Muscatine, Marshalltown, Clarinda and Waverly have been actively canvassed and the services accepted by a good group of contract holders in each town. By the time this issue of the Journal is printed operation will have been started in Mason City and the Tri-Cities of Davenport, Moline and Rock Island.

The Tri-Cities, being to a great extent a single community, were desirous of enrolling in one plan and after studying both Illinois and Iowa plans, and receiving information that the Iowa plan could operate in Illinois, they decided to contract with the Iowa plan. The inclusion of these cities, which are primarily industrial, will be of great value because the enrollment and operation is much simpler in the places where there are more of the larger industrial plants, and employers of large groups of people.

Operations in Clarinda and Waverly, towns of about 5,000 population, mark the first efforts to enter into the smaller communities of Iowa. In each of these the plan was opened to employed groups of five or more, and approximately ten per cent of the population in each town is enrolled. Efforts are being made to work out methods for enrolling others in these communities who are individually employed, but have some common interest or organization through which enrollment can be effected. It has been proved, beyond question, that the enrollment of individuals cannot be safely undertaken. Experiments in New York and other cities proved that such a scheme would soon bankrupt a plan. When individuals are enrolled there is an automatic enrollment of a large number who are excessively hospital-conscious, or who are below the average in health. Groups have been successfully enrolled through service clubs, newspapers, churches and similar organi-

* Reprinted from the Journal of Iowa State Medical Society.

zations, and such plans may be used if the demand is sufficient.

At the present time more than 12,000 persons are covered by the plan. Up to the first of October approximately \$9,000 had been paid to the hospitals for services rendered the subscribers, and \$1,100 was due hospitals on that date and would be paid following the approval by the executive committee. The statement of the company on September 1 showed that the income had become greater than the expenditure, and by October 1 a substantial reserve was being laid aside in case of an unusual demand during the winter months. With the rapid growth in the number of contracts issued there is no doubt that the plan will be successful. Experience has shown that even the present enrollment is sufficient to carry the overhead, pay all bills, and allow the accumulation of a reasonable reserve. However, it is the desire of everyone connected with the plan to have it reach as many people in the state as possible. A committee of the Iowa Farm Bureau Federation is studying the plans and expects to endorse the principle and assist in the development of methods to make it available to the farm population.

The Council on Hospital Service Plans of the American Hospital Association carries on a continuous study of the various plans, receives reports of their operation, and is able to correlate this information so as to help the various plans in their development. It has found many factors which make for success or failure and is able to warn the plans in advance of unsound moves, and point out methods which have proved valuable in similar circumstances elsewhere. In an analysis of 200,000 patients hospitalized under prepayment plans, it was found that from thirty to sixty per cent elected to use better accommodations than those provided by the plan. In other words, if the plan provided semi-private rooms, the patient was able to pay the small difference and have the advantage of a low priced private room. In addition, in one tabulation of 10,000 patients it was found that thirty-five per cent of these would have had to enter public wards if their hospital service had not paid their expenses in semi-private rooms. This means that 3,500 patients paid their hospitalization through this plan instead of having the expenses paid in the wards by the public through taxation. The patient benefited, the hospital benefited and the public benefited. These patients were also cared for by their own private physician instead of receiving free care through the provisions made in the wards.

Hospital prepayment seems to be meeting a real need of the public; it is well received in all communities where it has been presented, and is "sold"

to the community with a maximum of effort and expense on the part of the plan itself.

PREPAYMENT FOR MEDICAL SERVICES

In contrast to the statements made in the preceding article on hospital service plans are the facts regarding the attempts in various states to furnish medical care to low income groups on a prepayment basis. For some time we have heard of the crying need of the public for some method of budgeting their medical expenses, and spreading the costs over a period of time. The newspapers have dealt with the subject, the various foundations and studies have shown a great desire on the part of the public for such plans, and the National Health Conference held that the need and demand were so great the federal government itself should take the matter in hand. With the great increase in interest in national defense, and with the necessity of bending all efforts to improve our condition along defense lines, the national figures have, at least temporarily, lost interest in the problem.

However, the medical profession has continued its research along this line in several states and counties and is gradually gathering a great deal of information as to the demand for this type of service. A study of these experiences is very interesting and leads one to the inescapable conclusion that the public is not only not demanding, but is not even interested in any such plans. Statewide plans have been put in operation in California and Michigan, and tentative plans for this fall are being developed in New Jersey, New York and Utah. Wisconsin used three areas during the last year in trying out three different types of plans, and after a year's operation expects to drop all of them as not having sufficient support to justify their continuation. (For a more complete discussion of this subject, see the August, 1940, issue of the Wisconsin Medical Journal.)

The Michigan Medical Service offers two contracts; one covers complete medical and surgical care, the other surgical care only. On May 31, 1940, there were 61,783 subscribers to the surgical benefit plan, but 58,000 of these were issued at one time to the employees of the Ford Motor Company. Only about 3,000 were issued to other groups, although a concentrated sales effort was made. There were only 1,200 complete medical service policies issued and these after four months of continuous efforts by sixteen representatives of the plan. During the first three months of operation about \$50,000 were paid for services rendered to 1,200 patients. There were sufficient funds to pay the physicians in full, cover operating expenses and leave a small net balance. The issuing of the large group of policies for surgical benefits only to the Ford employees has been

of great benefit to the plan, and loads the statistics on the favorable side. The experience in other groups has been very unsatisfactory, and there are not enough now enrolled in the plan to make it self supporting.

The California Physicians Service offers complete coverage, hospital, medical and surgical, for \$2.50 per month per person. In addition there are deductible policies and those offering only physician's or hospital services. On July 1, 1940, after ten months of intensive work there were only 14,840 subscribers, in spite of the fact that such an apparent demand was worked up in the state there was serious consideration given to developing a state operated medical care plan. This plan is not self supporting as yet since it had a large initial loan for organization from the California State Medical Society and had to have an additional authorization of funds from that society after almost a year's operation. Almost eighty per cent of the members of the California State Medical Society have joined the plan, have placed literature before their patients, and have attempted to make the plan work. Possibly further effort and expense will finally get the plan on its feet, but the public has been slow in accepting the services offered.

New Jersey expects to inaugurate a statewide plan, but for the year 1940-41 the plan will be limited to two industrial counties. This plan is limited to groups, the cost is based on a percentage of the subscribers' earned income, and payment is limited to \$250 for a single person or \$500 for a family in any one contract year.

New York expects to start a plan in operation this fall. It will be organized in county units, no unit to include more than eighteen counties. The cost varies from \$15 to \$9.00 per year depending on the income and size of the family. Payment varies from \$200 to \$400 per year depending on the contract. In addition the policy holder must pay from \$5.00 to \$10.00 on any medical bill during a contract year before the plan begins payment on the balance. This is similar to the deductible automobile liability policy. Under this plan the physician is paid on a unit basis; his pay will depend entirely on the funds available and will vary from time to time.

The Utah plan is a cash indemnity insurance policy. For a fee of from \$10.80 to \$24.00 per year, depending on the size of the family, the policy holder is reimbursed in cash for certain stated conditions, with a limit of \$100 for any one individual and \$300 for any one family. This is not expected to cover all hospital and medical costs, but to cushion the load, and make it possible for the insured more easily to pay the balance.

The Advisory Committee on Voluntary Sickness Insurance of the State Medical Society of Wisconsin

made a detailed study of the operation of the plans tried in three counties in that state. This committee feels that their experimentation has been worthwhile, and that further experiment with different plans should be carried out, in an effort to find plans which will prove effective. Several of their conclusions, based on a year's experience are well worth noting, and in most instances bear out the opinion expressed by the medical profession in the past. A few of the most interesting follow.

There was little spontaneous demand for the services by the people in the three communities where they were made available. Much publicity, many public and industrial meetings, and other methods of getting publicity failed to secure enough applicants to carry the plans to success. Subscribers to voluntary sickness insurance do not make use of preventive measures to any increased extent, even though there is no cost attached to these services. Immunizations were not increased, and prenatal examinations were not sought either earlier in pregnancy or more often than when paid for as individual services. Those who subscribed to the plans were not those for whom they were really intended. The subscribers were usually those in the "comfort bracket" who had been accustomed to paying their medical bills in full. The lower income group did not subscribe, and thus there was little real benefit. Free choice of physician was insisted on by the public participating, and is not a catch word used by the medical profession. Under sickness insurance a small percentage of the physicians render a high percentage of the services. The patients still call the physician of their choice, and there is no tendency for the work to be evenly distributed among the physicians. The busy physicians are still busy and the unoccupied are still unoccupied. It is not desirable to establish a large number of individually operated sickness insurance plans, because there is a great duplication in overhead, supervision, legal costs and similar expenses. Any plan should be extensive, and if possible statewide in its scope. Any plan of voluntary sickness insurance to be successful must have not only the approval, but also the active support of the physicians in the plan.

These observations bear out the opinion expressed previously in these columns that the public does not actually demand sickness insurance. There is an emotional appeal to the subject. The picture of the poor sick person, suffering for lack of medical care, due to inability to pay the high costs, is one which moves any one to pity. In actual practice, however, when that individual is given the opportunity to pay for these services in advance, at a fee within his ability he is seldom interested, and prefers to take the risk of being sick. The individual who can pay

his bills will often see the desirability of budgeting these costs in this fashion and will subscribe to the plan, but he is not the man for whom it is intended. It may be that plans can be worked out which will appeal to the group for whom they will be most beneficial, but at this time no plan has been accepted with enthusiasm, and in fact it has been necessary to force plans on the few who could be persuaded to join. Further studies will be watched with interest.

MEDICAL SCHOOL

SOME SCIENTIFIC BASES FOR SULFONAMIDE THERAPY*

Tom R. Hamilton, M.D.

Bette Wasson, A.B.

Kansas City, Kansas

In a general way the mode of action of sulfonamide drugs is a production of an environment in body fluids and tissues which is unfavorable for bacterial multiplication. As the capacity of bacteria to multiply is depressed their invasiveness is diminished and their vitality reduced to a point at which the natural defenses of the body can dispose of the organisms (Lockwood)¹.

In order to rationalize the more perplexing problems remaining in the field of sulfonamide therapy, the fundamental bases behind them should be considered. These bases include several pertinent facts that are not evident, others that are obscure, and probably more that are not recognized. Those to be considered are (1) the underlying pathology of the lesion, (2) sulfonamide inhibitors which may be associated with the lesions, (3) the activities of antibacterial defense, and (4) the ratio between the number of bacteria and the concentration of the drug.

Tissues with relatively normal architecture and body fluid which are nearly normal favor an optimum chemotherapeutic response, although such areas are characterized by a rapid multiplicity and dissemination of bacteria (typified by diffuse streptococcal infections which had a poor prognosis before the advent of sulfonamide drugs) according to Lockwood. Infections of serous and synovial membranes, where the lining cells resist proteolytic fer-

ments and have a good blood supply, are also good sites for favorable chemotherapy.

Resistance to chemotherapy is the rule in lesions characterized by local tissue necrosis. Autolyzed tissues and dead bacteria may serve as sulfonamide inhibitors, as shown by MacLeod². Peptone was shown to have this effect (Lockwood³). Para amino benzoic acid is a growth promoting agent according to Wood⁴, who postulated that sulfonamides act by inhibiting its utilization. This substance may be added to media to combat the effect of drug therapy on blood cultures (Janeway⁵).

On the basis of this activity of necrotic tissue, a surgeon should not forget his original teachings of debridement and drainage in his enthusiasm over new therapeutic agents. The difficulties lying in metastatic abscesses to which one does not have access still remain as a serious problem, e.g. in staphylococcal infections in spite of sulfathiazole specificity. Thrombophlebitis is another example in which the resistance to chemotherapeutic activity is marked according to Lockwood¹. The problem of subacute bacterial endocarditis definitely is differentiated from the more simple one of bacteremia, by the complicating factors of thrombosis and the necrotic tissue of infarcts. It is also the opinion of the authors, from *in vitro* experiments now in progress, that concepts based upon observations on hemolytic streptococci are not carried over necessarily to the problem of *Streptococcus viridans* infections. Some substances fundamental in the production of such reactions as the sedimentation rate may complicate the problem. This is in keeping with the significant clinical observation pointed out by Major⁶ that an early return of that reaction to normal is correlated with a favorable prognosis in these endocarditis patients treated with sulfonamide derivatives.

The antibacterial defense associated with sulfonamide drug action has been shown to be primarily in the activities of the leukocytes and antibodies in the blood, as strikingly demonstrated by Fuller et al⁷.

The ratio between the number of bacteria and the concentration of the drug has been found to be of basic importance in the work of many investigators. Clinically, if an infection is overwhelming, an adequate amount of drug can not come in contact with organisms unless a direct application can be made into a wound. On the other hand, in such locations as these wounds and in the urine, sulfathiazole may be greatly concentrated, and an otherwise unaffected organism may be overcome (Hill et al⁸, and Neter⁹). For this reason, "Optimum dilutions" are first determined for the inoculation of each strain of strep-

*Hixon Laboratory of Medical Research, University of Kansas School of Medicine.

NOTE: Strains of Streptococci used in experiments were furnished by Rebecca Lancefield, with the exception of KUH strains isolated by the authors in the Clinical Bacteriology Laboratory of University of Kansas Hospitals.

tococci which we study, for if the number of organisms is too great no drug effect may be ascertained. The marked variation between the original growth rates of selected strains of streptococci, with other conditions constant, gives an insight into the susceptibility of this environment to the specific organisms.

The classification of streptococci according to the Lancefield grouping by precipitin reactions using specific carbohydrate extracts of the organisms with known high titer antisera^{10,11} leads to a clearer understanding, based upon accurate serological reaction. So-called "atypical" strains refer to those which have an inconsistent reaction on blood agar.

An evaluation of therapeutic response to a "hemolytic streptococcus infection" is dependent upon an almost species specificity of virulence among organisms which appear as so-called "typical hemolytic" strains on blood agar plates.

A selection of strains was made for an in vitro study of the effect of chemotherapeutic agents upon them, under as nearly bacteremic conditions as possible, i.e. with numbers of organisms comparable to those isolated from the blood stream of patients. Concentrations of drug in mg per cent comparable to clinical blood levels were also used.

Lancefield groups A, C, and G may be considered as "typical hemolytic".

Group A is the usual human pathogen, seen clinically in sore throats, scarlet fever, wounds, etc. e.g. *Streptococcus pyogenes*.

Group C is a usual animal pathogen, which in guinea pigs characteristically produces lymphadenitis. Clinically, it was interesting to note that an indolant nodular lesion of the finger, associated with epitrochlear and axillary lymphadenopathy measuring two cm in diameter, developed in an individual who had been autopsying guinea pigs with such an infection. In the patient, the lesions were stubborn and tender, but they were not attended by fever or leukocytosis and gave no untoward systemic reactions. A Group C streptococcus was isolated from the little pus which was obtained from the finger. All tests for tularemia were negative. The lymphadenopathy is still present after one year.

Group G is a mild human pathogen, e.g. *Streptococcus angiosus*. Members may be pathogenic for dogs.

Lancefield groups B and D may be called "atypical" since they may be hemolytic or green producing strains.

Group D, the enterococci, are typically sulfonamide resistant. A hemolytic strain, C3 Lancefield, and *S. fecalis*, a green producing KUH strain, were used. Another *S. fecalis* was isolated by the authors

from a case of subacute bacterial endocarditis in which condition this organism may be confused with *Streptococcus viridans* as was pointed out by R. Lancefield (personal communication).

Group B, the bovine pathogen was studied using 090 "R" Lancefield, and a KUH strain CC from a skin lesion. These organisms may be either hemolytic or green producers, and in the latter instance may be confused with *Streptococcus viridans* along with Group D (as noted above).

The results of our studies show that sulfathiazole in blood concentrations within the therapeutic range inhibits the growth of Groups A, B, C, and G streptococci in vitro, while the enterococci were not affected in much higher concentrations.

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THE SURGICAL TREATMENT OF DEAFNESS*

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The treatment of deafness by the labyrinthine fenestration operation has now passed the preliminary stages of experimentation, and is now a definite surgical procedure. Since the work of Holmgren¹, and Sourdille², and Lempert who first described his one stage technique, enough time has elapsed to review the report of such men as Campbell⁴, Shambaugh⁵, and Lempert⁶. That now we can be absolutely convinced that the future of the treatment of progressive deafness is surgical.

Sourdille² reports that a great number of his patients have retained opened fistula for periods of six to eight years following his fenestration operation.

*From the Department of Otolaryngology, Rhinology and Laryngology of the University of Kansas School of Medicine, Kansas City, Kansas.

Lempert's⁶ report in his last series of 120 cases states that the fenestra, if it closes, usually starts within the first three weeks following the operation, and is complete in ten weeks. If not closed in eight weeks, it remains open permanently. Lempert's earliest cases now have had four years of positive improvement in hearing.

In a survey of all of the literature, there has been no audiometrically substantiated improvements in hearing in cases of otosclerosis from any other types of treatment, such as surgical or medical, as great as those reported by Lempert and those using his technique.

INDICATION FOR OPERATION

Otosclerosis is a bilateral type of chronic progressive deafness with a hereditary background, the onset occurring in the early teens, or aggravated by pregnancy or severe illness. The membrum tympanum is normal in appearance, and occasionally the red reflex is visible in the posterior quadrant. The chief complaint is tinnitus aurium which is of varying intensity, and may cause many sleepless nights until identified.

The fixation of stapes is indicated by a negative Gille.

The Schwabach is negative. Hearing is longer by bone than by air conduction. The use of 256 fork with vibration of 110 seconds by air, and seventy seconds by bone makes the ideal fork for proper comparison between air and bone. Loss of the low tones, sixty-four and 128, are the first ones lost. The Weber may or may not be laterized.

The eustachian tube is patent.

A complete absence of suppurative middle ear disease.

A loss of hearing by air (audiometrically) of not more than sixty per cent.

A loss of hearing by bone conduction determined by masking (audiometrically) which does not exceed eighteen per cent to twenty per cent for the frequencies of 512—1024, and 2048.

The conversational frequencies must have declined below such a level that ordinary conversation is impossible.

Bone conduction is the index of cochlea function, so careful studies must be made and remade to be positive that the nerve function is ample to receive the sound waves as they are transmitted through endolymph of labyrinth to the cochlea.

The acuity of hearing should be also determined by the low conversational voice test.

A complete intact cutaneous lining of bony canal wall of the external auditory canal.

The labyrinthine horizontal semicircular canal must have normal responses to the caloric tests. The individual must be free from organic diseases, with normal blood, urine, and chemical studies.

A roentgenogram of mastoid cells to visualize the type of cells, and the zygomatic space available for operation procedure.

OPERATIVE PROCEDURE OF LEMPERT

1. One Stage:

- (a) Endaural incision.
- (b) Mastoidectomy with exposure of external semicircular canal.
- (c) Exposure of incus, and malleus.
- (d) Plastic construction of the tympanomeatal cutaneous membrane.
- (e) Separation of malleus from incus with amputation of the head of malleus.
- (f) Fenestration of horizontal external semicircular canal.
- (g) Plastic flap of the intact tympanomeatal cutaneous membrane, covers the fenestra and seals the perilymph, and lies in direct contact with perilymph.

CONCLUSION

1. No treatment for progressive deafness such as:

- (a) Dietary measures.
- (b) Metabolic correction.
- (c) Nasal and pharyngeal surgery.
- (d) Eustachian treatment.
- (e) Massage of membrane tympanum.
- (f) X-ray treatment.
- (g) All other types and measures of treatment.

NONE

None have given substantiated improvement in hearing as shown by audiometric findings.

II. The future of chronic progressive deafness is surgical.

(a) The operative procedure is not just another operation, but based on different surgical principles with a thorough knowledge and understanding of the principles of reconstructive plastic surgery.

(b) That practical physiologic hearing can be permanently restored in the great majority of cases in the properly selected cases.

(c) An operative procedure for restoration of a normal physiological function, without the presence of gross pathology, is another advance in the field of surgery.

In all fairness to the surgical technique of Lempert and his teachings. The otologist no matter what type of training he has had, should not attempt this particular operation without special training under a master in this surgical procedure or the operation

will fail, and the future progress of treating the chronic progressive otosclerosis will be handicapped.

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LYMPHOSARCOMA INVOLVING THE EPIDURAL SPACE

(Continued from Page 213)

SUMMARY

A case of lymphosarcoma of the epidural space has been reported. There is no clinical or roentgenographic evidence to suggest that this growth did not arise primarily in the epidural space. It followed the usual course of fairly rapid progression resulting fatally, while at the same time showing great susceptibility to x-ray therapy.

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OFFICIAL PROCEEDINGS

The following report presented by Dean H. R. Wahl on behalf of the University of Kansas School of Medicine is submitted by the Committee on Medical Schools as a part of its annual report:

The Lawrence division of the School of Medicine is still crowded, and has shown no change over the situation that has existed there during the past ten or twelve years. Accommodations are scarcely sufficient for a class of seventy, and as many as ninety students have been crowded into this space. The prospects of a new mineral resources building at Lawrence may provide additional facilities for the Medical School.

The Kansas City division has experienced one major change, moving the Dispensary into the new quarters. This new out-patient department is a great improvement over the old building. It is a fine, modern, three-story building containing ample rooms for the examination of patients, and a large classroom accommodating close to three hundred students. This building also has accommodations for laboratories, a new pharmacy,

a maternity division, and all of the various clinics in the medical and surgical departments.

The convalescent ward continues to be an active place for the overflow of the hospital, especially for those patients not needing constant nursing care.

The actual cost of maintaining each patient is close to \$2.70 per day, and it has seemed impossible to keep the ward open at the low rate of \$1 per day received from the counties. However, this has probably been eliminated through a special appropriation given by the Legislature, the amount being equivalent to an additional \$1 per day, and the tuberculosis ward accommodating thirty or forty patients will continue to be utilized for teaching and for the care of local tuberculosis patients.

The post-graduate clinics were recently held here, and many excellent courses were offered. One hundred and thirty-five men were enrolled. The courses covered a period of four days, and included subjects of special interest to practicing physicians.

The Medical School is still having difficulty taking care of the large number of applicants. The school has recently increased its requirements for admission, so that now a 1.3 average is required. Furthermore, the requirements for promotion from one year to the next have increased; instead of having a straight "C" average, a student must now have a 1.2 average in order to be eligible for promotion.

The following is general medical school information:

Total number of students enrolled.....	337
Number of Freshman students (regular).....	70
Number of Freshman students marked "special".....	18
Number of students enrolled in Kansas City, Kan.....	249
Number of Senior students (regular).....	71
Number of Senior students (irregular).....	11
Number of Junior students (regular).....	70
Number of Junior students (irregular).....	13
Number of Sophomore students (regular).....	70
Number of Sophomore students (irregular).....	14
Number of student applications received from Kan.....	127
Number of students placed on the waiting list.....	25
Number of students from Kansas admitted early in summer.....	96
Number of these students who did not enter medical school.....	11
Number of Kansas applicants not eligible.....	18
Number of Kansas applicants fully qualified but not admitted.....	7
Total number of applicants.....	over 600
Total number of applicants from Missouri.....	11
Number of students admitted from Missouri.....	3
Number of Kansas residents admitted in reg. class.....	67
Number of Kansas residents as special students in Freshman class.....	18
Number of nurses in training.....	101
Number of nurses in graduating class.....	29
Number of student nurses with college degrees (combined degrees).....	47
Number of student nurses with one or more years college work.....	56

The Army has called into service several members of the active resident staff, which has caused considerable disturbance in our organization, two of our full-time men having been called in the last two months. We are hoping that no further call will be made on the full-time personnel. These men are very difficult to replace at the present time.

Evacuation Hospital No. 77 has been recently organized here. Dr. E. H. Hashinger is in charge of the medical division and of the unit as a whole; Dr. James Weaver is in charge of the surgical division. The personnel recommended is as follows:

Surgery Division—Lt. Colonel: J. B. Weaver; Majors: F. I. Wilson, Wayne Bartlett, T. G. Dillon, D. F. Coburn; Captains: T. G. Duckett, Charles Isbell, M. S. Harless, William Kuhn II,

Thomas Johnson, Paul Rannie, F. A. Carmichael, Jr.; Lieutenants: Glenn Franklin, Melvin Rabe, Monti Belot, Harold Poole.

Medicine Division—Lt. Colonel: E. H. Hashinger; Major: M. H. Delp; Captains: Maurice Snyder; Joseph J. Lulich; Lieutenants: Max S. Allen, John Rumsey, Jesse Rising.

Dentistry Division—Captain: Robert E. Menees.

Laboratory—Captain: Tom R. Hamilton.

X-Ray—Captain: John Bowser.

The following research gifts have been given to the Medical School:

Breon Fellowship of \$2,000, now being held by Dr. Joseph Lulich.

Dorothy Hixon Clendening Fellowship of \$5,000 includes two research fellows now employed here, Dr. Jerome Schnedorf and Miss Dorothy Lobb.

The Boyland Fund for Surgical Research contributed \$500 for work on undulant fever; Mrs. Dorothy Crawford has been working on this problem under the supervision of Dr. Fred Angle.

Dr. James Weaver was recently given \$2,820 by the Federal Government through the State Board of Health to study osteomyelitis. Dr. M. W. Tyler and Mr. Lewis Coriell are assisting Dr. Weaver in carrying on this research work.

In connection with research work carried on in this institution, it is particularly interesting to mention that the hospital has contributed approximately \$5,000 for research, by providing free hospitalization.

The following gifts have been received by the Medical School:

\$5 as a memorial to the late Dr. A. S. Welch.

A \$300 bequest by Ina Ula Wright to be used for special equipment in the Occupational Therapy Department.

A \$1,000 bequest by Mrs. Minnie Baskin to be used to provide lectures on the children's diseases.

\$1,052 by the Wyandotte County Medical Society for the purchase of library books to be added to the medical school library. All members of the Wyandotte County Medical Society are entitled to the use of the library at any time, there being approximately 25,000 volumes available.

During the past year 1,300 county patients from all but ten counties in Kansas were admitted here, and that there were five counties from which more patients were sent than came from Wyandotte County, which would indicate that our institution is serving other counties in the state as well as the local county in which it is located.

TO: THE HOUSE OF DELEGATES

The Editorial Board wishes to submit the following report for the period from May 1, 1940, to May 1, 1941.

The financial statement for the Journal shows all income and expense to and including the April, 1941, issue and reflects the following condition:

FINANCIAL REPORT OF THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

May 1, 1940, to May 1, 1941

ASSETS:

Cash in Bank.....	\$ 966.80
Accounts Receivable	
April Adv. Rec.....	\$508.23
Other Acc. Rec.....	226.00

	734.23
Paper Stock on Hand.....	237.56
Stamps and Mailing Fund Deposit..	20.00

\$1,958.59 \$1,958.59

LIABILITIES:

Accounts Payable — Printing and Engraving, April Issue.....	\$ 376.41	\$ 376.41
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Surplus\$1,582.18

INCOME AND EXPENSE REPORT

May 1, 1940, to May 1, 1941

INCOME:

Advertising	\$5,761.86
Subscriptions and Miscellaneous.....	67.72

\$5,829.58 \$5,829.58

EXPENSE:

Printing	\$3,407.07
Engraving	287.01
Mailing and Postage.....	265.00
Salary	1,168.20
Paper Stock (\$577.64).....	340.08
Misc. (Soc. Sec., Supplies, etc.)	128.88
Travel	100.00

\$5,696.24 \$5,696.24

Net surplus for year.....\$ 133.34

The amount of \$133.34 shown is in excess of income over expense for 1941 and may be compared with the amount of \$301.15 shown as excess over income in 1940. Likewise, the surplus in the Journal fund of \$1,582.18 may be compared with the surplus of \$1,498.49 reported in 1940.

The Journal income for the two years was \$5,829.58 in 1941 and \$5,809.97 in 1940. The difference in excess over income as compared with some years over last year, therefore, represents certain additional expenses which have been made in the publication. This expense incurred in the increase of heavier cover and inside stock and certain other additional features which it is hoped have improved the Journal in appearance and readability.

The Journal pays for its own stationery, supplies, stamps and the salary of its full time employee; the publishing and mailing of the Journal and an attempt is made to see that the publication is maintained on a self-supporting basis.

The regular sections of the Journal which have been continued throughout the year include sections on Cancer Control; Eye, Ear, Nose and Throat; Medical Economics; Tuberculosis and Auxiliary and to these have been added the section on Books and the section on Medical School.

The Journal has continued its former policy of contributing exchange periodicals to the Library of the University of Kansas School of Medicine, sending some 140 publications received each month, and placing the books reviewed in the Stormont Medical Library of which more than fifty have been given to the library in the past year.

The Editorial Board believes that a larger number of articles can be prepared by members for publication in the Journal and similar medical publications. It desires that the Journal shall constantly improve the quality of the scientific material and cover as nearly as possible the interest and activities of all members. The Board wishes to express thanks to all who have made contributions to the Journal, to those members who have reviewed books for that section and to the committee chairmen who have

assisted in contributions and edited material for the various departments of the publication.

Any criticism or suggestion which the House of Delegates, the Council, officers or members of the Society may care to make will be gladly received by the Board.

Respectfully submitted,

W. M. Mills, M.D.,
Chairman, Editorial Board

TO: THE HOUSE OF DELEGATES

I wish to inform the Society that following of our members have died during the year on the dates and from the causes described. The report covers the period from April 1, 1940, to April 1, 1941, with the addition of those deaths not reported last year.

NAME	AGE YRS.	DATE	PLACE	CAUSE
Eagan, Robert E.....	70	Feb. 1	Long Beach, Cal	Cerebral Hemorrhage.
Mowery, William E....	55	Mar. 6	Orlando, Fla.	Heart Disease.
Johnson, Albert C.....	75	Apr. 2	Chanute	Unresolved pneumonia, old coronary thrombosis.
Walker, Joseph G.....	64	May 5	Wichita	Coronary occlusion.
Muir, David Thos.....	70	May 13	Alden	Carcinoma of bladder.
Brown, Charles E.....	62	June 17	Leavenworth	Acute empyema of gall bladder hypertensive heart disease.
Brown, John Clark....	81	June 25	Wichita	Abscess of liver, myocarditis.
Ross, Albert Stuber....	78	July 6	Sabetha	Cerebral hemorrhage.
Ressler, Charles E.....	70	July 16	Anthony	Arterial hypertension, general arteriosclerosis.
Wynne, Francis E.....	32	July 30	Baxter Springs	Poliomyelitis.
Snyder, Howard L.....	61	Aug. 16	Winfield	Coronary occlusion.
Nelson, Hugo E.....	69	Sept. 2	Denver, Colo.	Not known.
Gunter, Carl C.....	61	Sept. 24	Concordia	Arterial hypertension.
Beasley, John Newton	66	Oct. 20	Topeka	Suicide—inhaled gas from motor vehicle exhaust.
Spessard, Michael R...	66	Oct. 20	Beloit	Coronary occlusion.
King, Lamole R.....	75	Nov. 4	Junction City	Coronary occlusion.
Smith, Benj. Peter....	60	Nov. 5	Neodesha	Angina pectoris.
Jones, William H.....	63	Nov. 7	Ashland	Coronary thrombosis and chronic nephritis.
Hepler, Clarence R...	66	Nov. 17	Parsons	Coronary occlusion.
Rose, John H.....	63	Nov. 27	Kansas City	Lobar pneumonia, perforated appendix.
Beasley, Clinton.....	86	Dec. 3	Bonner Springs	Cerebral hemorrhage.
Shadwick, George W.	78	Dec. 5	Iola	Cerebral hemorrhage.
Williams, Alexander P.	66	Jan. 21	Neodesha	Carcinoma of liver.
Follett, Paris.....	75	Mar. 9	Chanute	Carcinoma of lung.
Scales, Herbert L.	71	Mar. 28	Hutchinson	Cerebral hemorrhage.

May I suggest a few minutes of silence at this time in honor of our departed members.

Respectfully submitted,

J. H. O'Connell, M.D.

Chairman, Committee on Necrology.

The remainder of the committee reports will be published in the June issue of the Journal.

NEWS NOTES

A. M. A. MEETING

The 92nd Annual Session of the American Medical Association will be held in Cleveland from June 2 to June 6, 1941. The Scientific sessions will be open on June 3 and the various section meetings will commence on June 4. The House of Delegates will hold its first meeting on June 2.

The American Golfing Association is to be held at the Cleveland County Club—Pepper Pyke Club, on June 2.

Hotel reservations may be made thru the Hotel Committee of the Cleveland Academy of Medicine of which Dr. Edward F. Krieger, 1604 Terminal Tower Building, Cleveland, is the chairman.

Since Cleveland is easily accessible by road and rail from Kansas (approximately 1000 miles from the center of the state) it is hoped that many members will find it possible to attend the meeting.

APPOINTMENTS

Governor Payne H. Ratner recently announced the following appointments:

Dr. Ralph Ball of Manhattan as a member of the Kansas State Board of Medical Registration and Examination.

Dr. J. F. Gsell of Wichita, Dr. R. T. Nichols of Hiawatha, Dr. W. C. Lathrop of Norton, and Mr. William E. Scott of Kansas City as members of the Kansas State Board of Health.

ANNUAL REGISTRATION

The Secretary's office of the Kansas State Board of Medical Registration and Examination will send out renewal notices, about the middle of June, to the last known address of each licensee. Any doctor of medicine, who has changed his address during the past year and has not notified Dr. J. F. Hassig, Secretary, 905 North Seventh Street, Kansas City, Kansas, should do so at once.

Registration fees are due July 1, and must be paid by October 1. After that date there is a penalty of \$5.00 for reinstatement of a Kansas license.

No receipts for payment of fees will be mailed until after July 1, as this is the beginning of the fiscal year for the State of Kansas.

The next annual meeting of the Board will be June 17-18, at the Wyandotte High School, Kansas City, Kansas, at which time the examination of applicants for licenses will be given.

QUESTIONNAIRE

The American Medical Association has prepared a new questionnaire on medical preparedness which is to be forwarded to every county medical society in the country in the near future.

The questionnaire, which is designed to obtain information concerning the availability of physicians for military service, will include the following questions:

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Kugelmass: "Newer Nutrition in Pediatric Practice."
J. B. Lippincott Co., Philadelphia, 1940, p. 334.

2. *Maximum Assimilation*—Metabolic studies of experimental animals may have valuable implications for infant nutrition. For example, "The relative assimilation values of mixed sugars per 100 gms. of body weight are as follows: Dextrin and maltose 1.32; dextrin and dextrose 1.32; sucrose 0.76; fructose 0.50; lactose 0.16 and galactose 0.10."

Ariyama & Takahasi, Biochemische, Zeitschrift, vol. 216, p. 269, 1929.

3. *Ready Utilization*—"Karo syrup may be fed in large amounts without danger and is, at the same time, readily utilized. In our experience, it has been the most satisfactory form of carbohydrate for the feeding of normal and most sick infants."

Marriott: "Infant Nutrition."
C. V. Mosby Co., St. Louis, 1930, p. 45.



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Minerals.....	0.6%	1 tablespoon....	60 cal.
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Actual number of physicians who are retired or not in practice.

Number of physicians who are deemed essential for the medical staffs of hospitals, related Institutions, Health Departments and Medical Schools (if any).

Number of physicians who are needed for full-time industrial practice, and for the care of the civilian population.

TUBERCULOSIS COURSE

The Kansas State Board of Health, the Kansas Tuberculosis and Health Association and the Society Committee on Control of Tuberculosis recently sponsored a state wide post graduate course on that subject.

Meetings were held in Topeka on April 14, in Parsons on April 15, in Wichita on April 16, and in Salina on April 17.

The speakers were Dr. H. I. Spector of St. Louis, Missouri, a member of the staff of the Chest Clinic of St. Louis University School of Medicine, and Dr. John F. Allen of Omaha, Nebraska, Professor of Clinical Medicine of the University of Nebraska School of Medicine.

Lay meetings were held in the afternoons and scientific meetings in the evenings in each of the above towns.

SELECTIVE SERVICE EXAMINATION

The Kansas Selective Service System recently completed a study of physical examination rejections of selective service registrants by county boards and by induction boards. The study includes information received from 13,636 physical examinations made to date by county boards and 5,180 physical examinations made to date by induction boards.

The percentages of registrants accepted and rejected for physical examination reasons are shown in the study as follows:

Sixty-five per cent of the registrants examined by county boards was found to be physically fit.

Seventeen per cent of the registrants examined by county boards was found to be physically fit for limited military duty.

Eighteen per cent of the registrants examined by county boards was found to be physically unfit for military service.

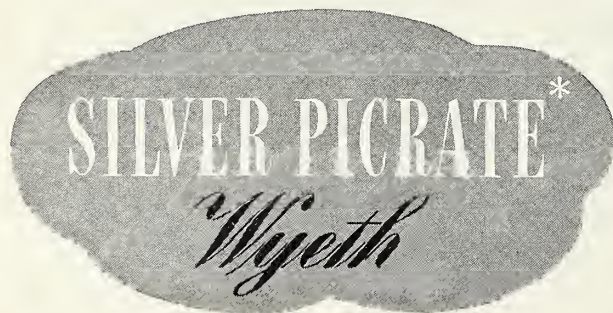
Eighty-eight per cent of the registrants pronounced physically fit by the county boards was accepted by the induction boards.

The variation of twelve per cent between the findings of the county boards and those of the induction boards was occasioned in many instances by the different type of examinations and the equipment and facilities provided therefor at the induction board centers.

The relative percentages of disability found by the county boards and the induction boards in the number rejected was as follows:

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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*Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

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Diseases of eyes, defective vision..	12.5 %	12 %
Diseases, enlargement and func- tional deficiencies of heart.....	12 %	10 %
Diseases, structural defects, ab- dominal organs; hernia, etc....	9.5 %	9 %
Mental and nervous diseases.....	8.5 %	3 %
Venereal diseases	6 %	8.5 %
Overweight	4 %	3 %
Diseases of ears, defective hear- ing	3.5 %	5 %
Underweight	3 %	2 %
Diseases of lungs	2.5 %	10 %
All other	10 %	11.5 %

The Kansas Selective Service System has said that it is well pleased with the efficiency the above study indicates is occurring in the Kansas selective service physical examination program. The small variation between induction board and county board findings speaks well for the type of examinations being given by the county board examiners and particularly so when the difference in equipment and facilities made available at those points is considered. It is also said that the Kansas percentage of rejections both by county boards and induction boards is the lowest or among the lowest in the United States.

LEGISLATURE

Approximately sixty bills of medical and public health interest were introduced in the 1941 session of the legislature which terminated on April 4.

Of foremost interest in this regard were the following:

House Bill 1, House Bill 286, House Resolution 8, and House Resolution 45, pertaining to the practice of medicine and surgery by osteopaths, none of which became effective.

House Bill 8 and Senate Bill 223, pertaining to the examination and licensure of naturopaths, both of which were killed.

House Bill 25 and Senate Resolution 2; extending to the Kansas State Board of Health additional authority and facilities for the handling of birth certificates, both of which were passed and signed by the Governor.

House Bill 31; requiring that chiropractors shall attend the meetings of the Kansas State Chiropractors Association or similar meetings before they shall be eligible to have their licenses re-registered, which was passed by the House and killed by a Senate Committee.

House Bill 41, House Bill 7, House Bill 367, House Bill 407 and Senate Bill 77; authorizing the construction of municipal hospitals in Russell, Arkansas City, Seneca, Herrington, and Pratt, all of which were passed and signed by the Governor.

House Bill 201; regulating the sale and use of narcotic drugs, which was not passed.

House Bill 245 and Senate Bill 312; pertaining to workmans compensation and including revision of certain medical functions therein, neither of which was passed.

House Bill 265 and House Bill 368; providing for pre marital and prenatal physical examinations respectively; neither of which was passed.

House Bill 319; an enabling act for group hospital

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GYNECOLOGY—Two Weeks Intensive Course starting June 16th and October 20th. Clinical, Diagnostic and Didactic Course every week.

OBSTETRICS—Two Weeks Personal Course starting May 26th. Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 8th. Informal and Personal Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.

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insurance sponsored by the Kansas State Hospital Association, which was passed and signed by the Governor.

Senate Resolution 21; requesting that the Legislative Research Council study the need for additional tuberculosis sanatorium, which was adopted.

Senate Bill 84; authorizing the amount available in claims against insolvent estates for expenses of the last sickness to be shared with claims for expenses of administration of estates, which was not passed.

A detailed explanation of the bills introduced in the session pertaining to medical and public health subjects was forwarded to the presidents, and secretaries of the county medical societies and the official representatives under the date of May 2.

MEMBERS

Dr. Harold H. Jones of Winfield was appointed Kansas representative of the Board of Governors of the American College of Physicians at the annual meeting of that organization held in Boston, Massachusetts during April.

Dr. J. L. Lattimore of Topeka, who is President-Elect of the American Society of Clinical Pathologists, was the guest speaker at a meeting of the Oklahoma State Society of Medical Technologists held on May 21 at Oklahoma City in conjunction with the annual meeting of the Oklahoma State Medical Association.

Dr. Karl A. Menninger, Dr. Will C. Menninger and Dr. Robert P. Knight of the Menninger Clinic in Topeka, have recently been elected to several positions of importance in national and district psychiatric organizations.

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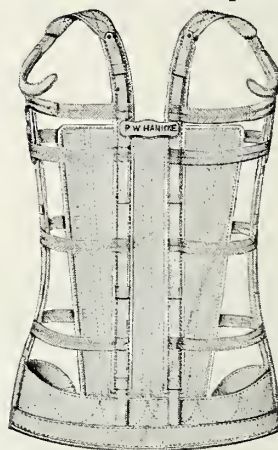
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Dr. Will C. Menninger was elected as Secretary of the Central Neuropsychiatric Association in October and in May as Secretary of the American Psychiatric Association. Dr. Robert Knight was re-elected President of the Topeka Psychoanalytic Society, a regional organization of the American Psychoanalytic Society. Dr. Karl A. Menninger was elected as councilor of the American Psychiatric Association, which is affiliated with the American Psychiatric Association and as President of the American Psychoanalytic Society.

COUNTY SOCIETIES

The Golden Belt Medical Society met in Junction City on April 3. Speakers were: Dr. L. S. Nelson of Salina who spoke on "Commoner Injuries of the Hand"; Dr. R. Lee Hoffman of Kansas City, Missouri, who discussed "Diseases of the Female Urethra"; Dr. Fred J. McEwen of Wichita, who spoke on "Cardiac Emergencies" and Dr. Earl Mills of Wichita, who discussed "Functional Heart Diseases." Dr. Robert M. Carr of Junction City was elected President of the organization for the coming year, and Dr. E. R. Gelvin of Concordia was elected Secretary.

The Lyon County Medical Society held a meeting in Emporia on March 4. Dr. F. A. Eckdall of Emporia spoke on "Medical Treatment of Gastric Ulcer." At the February meeting of the society, Dr. J. F. Gsell of Wichita spoke on "Medicine and Politics."

Ninety members of the Southeastern Kansas Medical Society attended a meeting of that society held at the CCC camp in Neodesha on March 28. Dr. J. H. Humphrey, a

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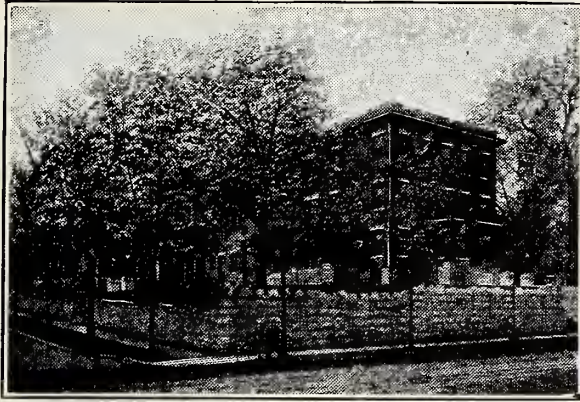
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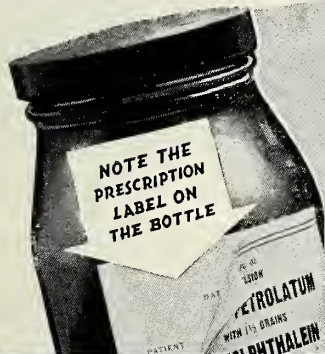
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former member of the society who has recently returned from China, spoke on "Medical Practice in the War Zones of China." A representative of Eli Lilly and Company, gave an illustrated lecture on "Late Methods in Treatment of Diabetes."

A meeting of the Northwest Kansas Medical Society was held at the State Sanatorium at Norton, Kansas, on April

17. The Scientific program consisted of papers by the Sanatorium staff. Dr. C. E. Petterson spoke on "Shock." Dr. F. Stone, Jr., discussed "Abdominal Pain Associated with Urethral Pathology." Dr. C. F. Taylor gave a paper on "Intra-pleural Penumolysis."

The Saline County Medical Society and the Saline County Dental Society held a joint meeting on March 20

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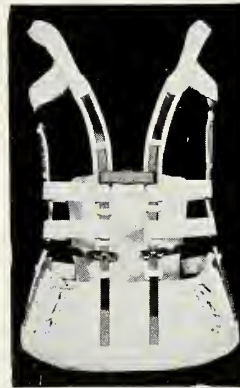
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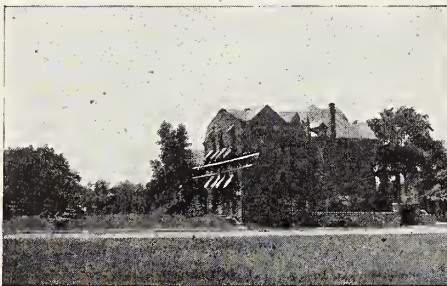
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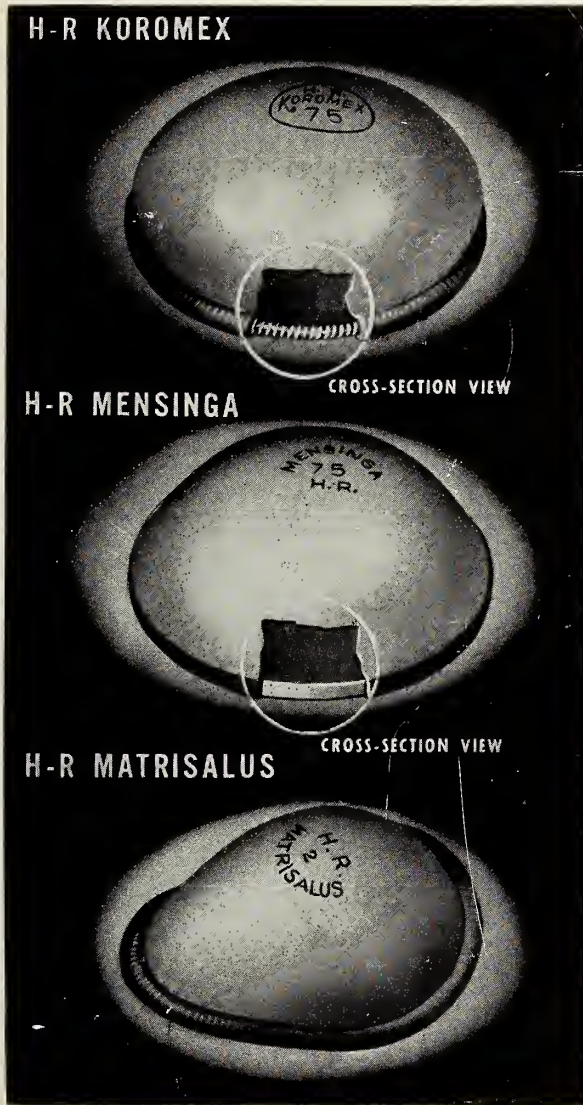
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in Salina. Dr. J. S. Hughes of the Department of Chemistry of the Kansas State College of Manhattan spoke on "Nutrition in Relation to Physical and Mental Efficiency."

KANSAS MEDICAL ASSISTANTS

One hundred eighty-seven assistants attended the second annual meeting of the Kansas Medical Assistants Society in Topeka on May 11 and 12. Six out-of-state assistants

were guests. New officers of the Society are Miss Myrtle Thompson, Manhattan, Vice-President; Mrs. Florence Linton, Topeka, President-Elect; Mrs. Vera Matthews, Kansas City, President; Miss Mildred McClure, Kansas City, Secretary; and Miss Marcelline Dinwiddie, Hutchinson, Treasurer. Miss Bessie Parker, Emporia; Miss Marie Schwartz, Great Bend; Mrs. Marjorie Euler, Topeka; Miss Dollie Herington, Arkansas City; and Miss Margaret O'Rorke, Dodge City were elected Councilors.

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Volume XLII

JUNE, 1941

Number 6

GYNECOLOGIC MANAGEMENT OF THE BARREN MARRIAGE*

George H. Gardner, M.D.**

Chicago, Illinois

It is amazing that most women assume full responsibility for their failure to become pregnant, and it is inconsistent that scientific papers dealing with this problem should be entitled "Female Sterility." This term implies that husbands are usually fertile, whereas forty per cent of them must either share or accept complete responsibility for a childless union. It is misleading also, because there are few individuals who can be considered absolutely fertile, and only a small number who are absolutely sterile. One must not forget that human beings, at best, are only relatively fertile. Consequently, "Barren Marriage" is a more appropriate title; it emphasizes the mutual liability of both parties in the wife's failure to conceive. Furthermore, the majority of barren marriages do not result from a single cause in one party, but from a multiplicity of factors in both; some may seem trivial but, added together, they are sufficient to prevent conception. Success in the relief of barrenness, therefore, depends on adequate examination of both the husband and the wife, followed by systematic elimination of all contributing factors from both parties. This may require the assistance of a urologist, an internist or an endocrinologist.

Everyone has a fair degree of success in the management of barren marriages, but, with most of us, the incidence of failures has been discouraging and far too high. In an effort to improve results, I have recently reviewed the current literature, have heeded some of the admonitions by recognized authorities that I formerly considered nonessential, and have completely revamped my management of these cases. The improvement in results has been gratifying.

*Presented at the 82nd Annual Session of The Kansas Medical Society, Topeka, May 14, 1941.

**From the Department of Obstetrics and Gynecology, Northwestern University Medical School and the Gynecologic Service of Passavant Memorial Hospital.

DIAGNOSTIC STUDIES

The gynecologist, or the physician first consulted, is obligated to make a diagnosis, i.e., to discover the factors which have contributed to the barrenness of a marriage. He must not jump at conclusions and he dare not take anything for granted. His examination must be thorough and I recommend that it include: (1) a search for gross abnormalities in the female generative tract, (2) an evaluation of the male factor, (3) study of the uterine cervix, (4) testing of the fallopian tubes for patency and (5) an investigation of the endocrine system.

Gross Abnormalities in the Female Genitalia: In addition to a pelvic examination, at her first visit the wife is subjected to a thorough general physical examination; blood counts are made and urine is analyzed. One should also attempt to evaluate the function of the glands of internal secretion from the height, weight and body configuration, together with the distribution of fat and hair.

The lower genital tract is searched for infection—leucorrhoeal discharges are of considerable importance. The reaction of vaginal and endocervical secretions is ascertained by means of nitrazene papers. Normal cervical secretions are alkaline, pH of 7 to 7.5; the healthy vagina is acid, pH of 4 to 4.5. The cervix is not only inspected but its canal is also tested for adequate patency.

The size of the uterus is significant. Hypoplasia may be suspected from the character of menstrual periods, the presence of an elongated small cervix with tiny external os, or from the difficulty experienced in palpating the corpus; the depth of the uterine cavity can be ascertained with a sound; normally it is about 7.5 cm.

Retrodisplacements of the uterus, with anterior tipping of the cervix away from the so-called receptaculum seminis, has been over-emphasized as a cause of infertility. However, following Sampson's description of endometriosis, retroflexion assumed a more important role in the problem of infertility. Pelvic endometriosis usually results from retrograde menstruation and such back-flow of menstrual blood is most likely to occur when the cervix is stenotic, the uterus is retroflexed, or fibroid tumors distort the uterine cavity. Pelvic endometriosis occurs fre-

quently in a private clientele, especially in young women who fail to become pregnant and among older patients with uterine fibroids. Thus far there is no convincing explanation for the low fertility of women with pelvic endometriosis; their tubes are patent; they ovulate, and indeed they may become pregnant—but not frequently. This condition should be suspected when the uterus is retroflexed and fixed, the ovaries are enlarged and adherent, and when there are tiny, firm sensitive nodulations either in the cul-de-sac, the rectovaginal septum or on the uterosacral ligaments. If the patient complains of dysmenorrhoea that has been acquired during adult life and consists, in part, of pain referred to the rectum, one can be almost certain that he is dealing with pelvic endometriosis.

Gynecologists disagree about the relationship of uterine fibroids to a woman's failure to conceive; however, no one denies that, through mechanical interference, these tumors may be responsible for miscarriages, premature labors or dystocia at term. However, there is another phase of the fibroid question which merits attention. Infertility and habitual abortion are closely allied problems, and certain instances of so-called infertility may, in reality, be cases of repeated early abortion—but the abortion occurs at such an extremely early stage that the gestation is not recognized. Very early spontaneous abortions may result from developmental defects either in the fertilized egg or in the endometrium. Since uterine fibroids tend to alter the normal physiologic response of the ovaries and the endometrium, they may be of considerable import in the barren marriage problem.

Palpable adnexal masses may be residues of pelvic inflammatory disease, or cystic ovaries, signifying either previous inflammation, endometriosis, endocrine imbalance, or new growth.

The Male Factor: The second step in the diagnostic study is an examination of the husband's semen. Preferably, the specimen should be obtained after several days of continence. It should be brought to the office in a clean glass container, not in a rubber condom. Both the powder on the condom, and the rubber, may inhibit the motility of spermatozoa. It is the gynecologist's duty to determine (1) the amount of semen (it should be about 4 c.c.); (2) the number of spermatozoa per cubic centimeter (the normal is said to be about one hundred million per cubic centimeter); (3) the motility of the spermatozoa (ninety per cent should be actively motile and migrating at body temperature, for at least one hour after ejaculation); (4) the morphology of the spermatozoa (at least eighty per cent should be normally formed), and (5) one should

search for adventitious elements, such as leucocytes and red blood cells.

Most husbands consider themselves fertile if sexually potent; they actually believe that patent tubes plus a potent male should invariably result in a pregnancy. However, husbands must be referred to a urologist if their semen does not conform in all respects to the aforementioned criteria. According to Mazer and Israel, "The degree of fertility of the male decreases, and approaches zero, with diminution of the volume, decline in the number and viability of spermatozoa, and with an increase in the percentage of abnormal forms." Failure to recognize deficiencies in semen has, no doubt, been responsible for some of our previous failures; possibly all husbands should be examined by a urologist, preferably by one who is especially interested in the problem of male infertility.

Patency of Fallopian Tubes: Patency of the fallopian tubes is determined by transuterine insufflation with carbon dioxide gas—this is a Rubin Test. I prefer an apparatus which receives CO₂ at a constant pressure, measures the volume of gas which passes into the abdomen and includes a mercury manometer. The ideal time to make this test is three to seven days after the conclusion of a menstrual period. Uterine bleeding and active inflammation either in the cervix or the fallopian tubes, are contraindications to this procedure. Under normal conditions, gas flows through the fallopian tubes freely at a pressure that fluctuates between forty and eighty mm. of mercury. The escape of gas through the tubes is recognized by the behavior of the mercury column, by auscultation over the lower abdomen and by shoulder-pain, which appears when the patient sits up. I do not consider kymographic recordings an essential part of the Rubin Test. If gas fails to pass through at 180 to 200 mm. Hg., the pressure should not be carried higher for fear of traumatizing the tubes. The position of the cannula in the uterus is changed several times, and gas pressure each time allowed to rise to 180 mm., before it is assumed that gas is not going to pass through at that test. The Rubin Test should be repeated three or four times, preferably at monthly intervals, before one is justified in concluding that the tubes are actually closed. Lipiodal injections are not used routinely; this procedure is reserved for patients who wish to consider surgical relief from occluded tubes; the chief value of hysterosalpingography is to demonstrate the exact site of tubal obstructions. Lipiodal and similar oily opaque media are not innocuous; sometimes they cause tubal inflammation and, if retained in the tubes, may set up a foreign-body reaction.

Study of the Uterine Cervix: The next step in

diagnosis is a Hühner Test. This should be performed at the time of ovulation, i.e., twelve to fourteen days before the expected onset of a menstrual period. The wife reports for examination several hours after coitus. If the husband's semen is normal, one should still find spermatozoa in the vaginal vault; however, they will probably be immotile, due to the hostile action of normal acid vaginal secretions. The presence of spermatozoa in the posterior vaginal fornix conclusively proves that semen had been delivered into the upper vagina. Mucus is next aspirated from the cervical canal and it is thought that cervical mucus is most abundant at the time of ovulation. In normal individuals, a drop of clear glairy endocervical mucus, aspirated six to eight hours after intercourse, contains at least eight to ten actively motile spermatozoa per high power field.

Consequently, the Hühner test determines that (1) intercourse was consummated normally, or (2) that the husband has hypospadias or premature ejaculations or (3) that the wife suffers from vaginismus which results in prompt evacuation of semen from the vagina. It also demonstrates the ability of spermatozoa to ascend into the cervical canal, and the effect of endocervical secretions on spermatozoa. Dead spermatozoa in the cervical canal are indicative of endocervical hostility; this usually results from an endocervicitis with a mucopurulent discharge that kills spermatozoa.

The Endocrine Survey: After one has examined the wife's genital organs for gross abnormalities, determined the status of the husband's spermatogenesis, investigated the patency of the cervix, uterus and fallopian tubes, checked on the delivery of semen to the cervix and the reception accorded spermatozoa by endocervical mucus, the final diagnostic step is an endocrine survey. It is chiefly concerned with the factors which control development of the uterus, function of the ovaries and response by the endometrium.

Healthy women of childbearing age, who menstruate normally and with some degree of regularity, probably also ovulate regularly. On the other hand, individuals without gross genital pathology, who either bleed continuously, are amenorrhoeic, or flow irregularly, infrequently and scantily, probably do not ovulate—such symptoms often result from abnormal function by the glands of internal secretion.

There is no direct method of proving that a woman ovulates. We must rely on presumptive evidence, namely, the histologic appearance of the endometrium at the onset of menstruation. Endometrial biopsies for this purpose are obtained with a suction curet, preferably within a few hours after the first show of menstrual blood. We may assume that

a woman has ovulated if her endometrium shows the normal response to corpus luteum hormone stimulation. Such progesterone effects, known also as secretory or progestational responses, are recognized by hypertrophy of stroma cells, corkscrew hypertrophy of the uterine glands and secretory swelling of their lining epithelial cells, but especially by the marked development of spiral arteries so that they penetrate the compacta, or surface layer, of the endometrium.

Some women bleed fairly regularly from an endometrium which has undergone only the proliferative changes of estrogenic or follicular hormone stimulation. This phenomenon is called anovulatory menstruation. Others bleed more or less continuously; biopsies reveal hyperplasia of the endometrium; the ovaries are devoid of corpora lutea and these women are sterile. For women who fail to ovulate regularly, as well as for many others, additional diagnostic studies are desirable, viz., x-ray films of the sella turcica, basal metabolic rates, blood cholesterol determinations and sugar tolerance tests. Few clinicians have access to laboratories equipped to make assays for the various hormones, but no one knows the practical value of such assays after they have been made. Consequently, they can not be considered essential in the investigation of a barren marriage.

TREATMENT

The gynecologist's diagnostic survey is a painstaking search for every factor which might contribute to the barren marriage. His next obligation is a systematic elimination of all contributing causes found in the wife. He must not restrict treatment to a single major factor, while neglecting the minor, more trivial causes. Due consideration to these apparently nonessential conditions may account for the success of some clinicians, where others fail. Furthermore, the husband can not be absolved from responsibility until his semen is normal and spermatozoa are found in the vaginal vault after coitus.

The leucorrhoeal discharge from an inflamed vagina may be so hostile to spermatozoa, that they are killed before reaching the haven of friendly endocervical mucus. Many cases of vaginitis are instances of *Trichomonas* infestation. I have had more success with Floraquin insufflations and lactic acid douches in relieving this type of vaginitis, than with other methods of treatment.

The normal pH of the vagina varies from 4.0 to 4.5 and this degree of acidity is not favorable to longevity of spermatozoa. Some cases of infertility have been rectified by the simple expedient of an alkaline douche before intercourse. This insures a less hostile medium for spermatozoa in the vagina and is conducive to their longer life; thus they are given an opportunity to reach the cervix.

Vaginismus may result from psychic factors; often it is an aftermath of pain experienced during coitus. Painful intercourse may be caused by a rigid hymenal ring, by vaginitis, or by inflammation in the upper genital tract. Whatever its cause, vaginismus must be relieved—otherwise vaginal spasm will promptly evacuate all seminal fluid. Some of my most grateful patients are those for whom a perineotomy made intercourse a comfortable event.

Cervical stenosis can usually be overcome by office dilatations with graduated dilators; occasionally gas anesthetic is necessary. Scar tissue obstructions in the cervix must be dilated periodically because they tend to recur; consequently, the cervix should be dilated every three months until it is certain that the canal will remain adequately patent.

Chronic endocervicitis is characterized by a tenacious mucopurulent discharge that pours from the external os or plugs the canal. Furthermore, cervical polyps, nabothian cysts, cervical strictures and erosions on the pars vaginalis, are frequent aftermaths of an endocervicitis. All may also be contributing factors to infertility, either because they are the source of a discharge which is hostile to spermatozoa or by obstructing the cervical canal, they tend to perpetuate an endocervicitis. Strictures must be dilated and polyps should be removed, but nabothian cysts are of importance only when they encroach on the canal lumen. I prefer cautery treatment for chronic endocervicitis and use the nasal-tip cautery blade to make separated linear burns, that extend from the internal to the external os and are placed in the four quadrants of the canal. Neither diathermy treatments with a cylindrical electrode nor conization of the canal have impressed me favorably. The cautery can also be used to destroy some erosions. Others require amputation, preferably by a modification of the Schroeder technic which has been popularized by Dr. Arthur H. Curtis. However, the amputation must be at a low level; removal of too much cervix might be responsible for subsequent miscarriage or premature labor.

If, at the time of ovulation, the cervical mucus is so scant that one is unable to obtain a specimen for examination—it is probably also insufficient to materially aid the ascent of spermatozoa into the uterus. The midinterval administration of estrogens tends to increase the amount of mucus secreted by cervical glands.

Some gynecologists recommend repeated dilatations of the cervix to stimulate growth of a hypoplastic uterus; this is harmless therapy but I disapprove of intrauterine stem pessaries; they are foreign bodies and predispose to infection. There is no doubt that the administration of estrogens produces hypertrophy of the uterus, but the hormone must be

given frequently and in large doses (50,000 International units). This is substitution therapy, it is not stimulating; consequently the uterine enlargement is only temporary; on the other hand, administering large amounts of an estrogen to an infertile woman has a theoretic disadvantage, it may inhibit ovulation.

If the uterus is freely movable, a retroflexion can usually be overcome by manual replacement; the anterior position is maintained by a suitable pessary.

The infertility of women with uterine fibroids is often dependent on associated pathology, not the fibroids themselves. Although I thoroughly approve of myomectomy, this operation is rarely an essential step in the management of a barren marriage.

If the history of scanty menstruation, the size of the uterus and the histologic evidence obtained from an endometrial biopsy, suggest that the endometrium is poorly developed and not favorable to the successful implantation of a fertilized egg, it can be made to grow more luxuriantly by substitution hormone therapy. This is accomplished with estrogens to prime the endometrium during the first half of the menstrual cycle, followed by generous doses of progesterone to supplement the action of the patient's own corpus luteum.

When gas fails to pass through the fallopian tubes at three consecutive monthly Rubin Tests, I assume that they are closed by firm adhesions; consequently further tests are considered superfluous. However, Rubin Tests also have therapeutic value, as is attested by the large number of patients who became pregnant immediately after a tubal insufflation. Apparently moderate gas pressure sometimes straightens out tubal kinks and ruptures filmy adhesions.

If the patient with occluded tubes wishes to consider surgical relief, roentgenograms should be made after an intrauterine injection of lipiodal or similar radio-opaque substance. Such films determine the exact site of tubal obstructions. Those located at the fimbriated ends are most favorable for plastic operations designed to restore tubal patency. Obstructions near the uterus, or at the cornua, are almost hopeless.

After hysterosalpingography and the demonstration of a favorable type of obstruction, it is my practice to tell the couple that the likelihood of success from a plastic operation on the tubes, is not more than fifteen or twenty per cent; that I am willing to undertake the operation if both the husband and his wife insist, but I cannot urge it. No woman should be submitted to salpingostomy unless occluded tubes constitute the major cause for her barren marriage. Furthermore, one must be certain that the husband's semen is normal and that his genital tract is free from infection; it would be sad, indeed, if the opera-

tion were successful but the husband promptly re-infected his wife and her tubes were again sealed.

Irving Stein is enthusiastic about the surgical treatment of certain amenorrhoeic, sterile women who have large polycystic ovaries; he resects a generous portion of the ovarian cortex together with the follicular cysts. Few gynecologists share Stein's enthusiasm because polycystic ovaries are probably not the essential pathology responsible for these patients' symptoms. Furthermore, I never recommend ovarian resections except in cases of endometriosis. Scar tissue, adhesions and more follicular cysts are almost inevitable after the surgical trauma of resecting ovaries. However, Stein's reports merit attention; someday there may be occasion to follow his recommendations.

Pelvic endometriosis that produces symptoms is an indication for operation. I urge surgery for younger women whose chief complaint is sterility, not only to increase the likelihood of pregnancy but also to conserve the ovaries. The usual procedure in such patients is (1) excision of available endometriotic nodules from peritoneal surfaces; (2) resection of chocolate cysts and other areas of endometriosis from the ovaries, provided at least fifty per cent of the original healthy ovarian tissue can be spared and (3) replacement of the uterus into an anterior position. The technic originated by Dr. Arthur H. Curtis is recommended for the surgical correction of retrodisplacement; it consists of three steps, (a) suturing together the uterosacral ligaments, (b) a Baldy-Webster type of round ligament shortening and (c) advancement of the bladder reflection of peritoneum to its normal location on the fundus. Conservative operations for endometriosis are worthwhile; not a few of my patients, who were previously infertile, became pregnant after submitting to these surgical procedures.

The treatment of ovaries which fail to ovulate is highly unsatisfactory. Disturbances in ovarian function may result either from primary ovarian failure or from malfunction by the anterior lobe of the pituitary gland. There is great need for potent gonadotropic hormones in the treatment of women with sluggish, poorly developed, nonovulating ovaries. Thus far the pituitary preparations have proven almost worthless. Early communications predicted that pregnant mare's serum hormone would stimulate the normal development of Graafian follicles, produce ovulation and exercise a luteinizing effect on the ruptured follicle. At present these far-reaching claims for the equine gonadotrope are seriously doubted. Apparently it only rarely produces ovulation in human ovaries. Nevertheless, I occasionally use an equine gonadotrope in the first half of the menstrual cycle, hoping that it may induce ovulation; in the

second half I may give an anterior pituitary-like luteinizing hormone to assist in the development of a corpus luteum.

I cannot recommend small, so-called stimulating doses of x-ray over the pituitary and ovaries as wise treatment for this group of patients. Several observers report great success, i.e., many pregnancies after such x-ray therapy, but I am afraid of it. X-rays are essentially destructive and there is reason to doubt that they ever exert a stimulating effect on normal tissues. Experience has shown that the dose of x-rays which temporarily inhibits ovarian function in one patient, may produce permanent atrophy of ovaries in another. Everyone realizes that prolonged exposure of a pregnant uterus to x-rays, has a disastrous effect on the fetus. Furthermore, I have been told that x-ray treatments to produce ovulation may have serious results, e.g., patients may become pregnant and the resulting infants will probably be healthy but the generations to follow, i.e., grandchildren of the women so treated, are likely to exhibit a high percentage of physical and mental defects. Especially is this true, when both grandmothers had been given x-ray treatments to induce ovulation.

General hygienic measures are extremely valuable adjuncts. By improving general health they tend, also, to improve ovarian function. Thyroid therapy is used frequently, in fact, whenever permissible; basal metabolism rates are obtained almost routinely; many of these patients are hypothyroid. Thyroid is unquestionably our most effective hormone in the relief of infertility. Foci of infection should be eradicated. A high-protein, low-carbohydrate diet and thyroid, are indicated for women who are overweight. Forced feedings, iron and a high vitamin intake are advisable for frail anemic undernourished individuals who are underweight. Regularity in habits, an adequate amount of sleep, avoidance of mental and physical fatigue, out-of-door exercise, and long vacations alone, are all beneficial. Vitamin D therapy is helpful but Vitamin E has only questionable value. Those interested in animal husbandry are convinced that Vitamin C deficiencies contribute to low fertility in domestic animals; probably this is also true for man.

Laymen have learned that women are most fertile midway in their menstrual cycles, i.e., that they are most likely to ovulate and hence to become pregnant, twelve to fourteen days before the expected onset of a menstrual period. However, this knowledge has certain disadvantages. Most men produce semen of the best quality when they have coitus infrequently, possibly once a week or three times a fortnight. Many couples are so intent on pregnancy that they have intercourse each night during the fertile period. Thus they create a state of relative

male sterility, at the time the wife is most fertile.

It would be remiss not to mention artificial insemination. Neither the laity nor the profession seems to appreciate the many ramifications of this term. A wife may be inseminated either with her husband's semen or with the semen from a donor. Furthermore, semen may be placed in the upper vagina on the cervix or it may be injected into the uterus. Using the husband's semen and placing it on the cervix is indicated when physical deformities or psychic disturbances prevent the completion of normal coitus. Injecting semen into the uterus is potentially dangerous; it may cause an upper genital infection. However, intrauterine insemination with the husband's semen might be countenanced if cervical hostility to spermatozoa could not be treated satisfactorily. I have always refused to inseminate women with donor semen; the moral, social and legal aspects of donor insemination make it highly objectionable.

CONCLUSIONS

(1) "Barren Marriage" is an appropriate term for the problem presented by a wife who fails to become pregnant.

(2) Either the husband or the wife may be responsible; usually both are partially at fault and both must be examined thoroughly.

(3) An adequate gynecologic survey of such cases is concerned with (a) the wife's general physical condition; (b) the status of her genital organs; (c) spermatogenesis; (d) delivery of semen to the cervix; (e) ascent of spermatozoa into the uterus; (f) patency of the fallopian tubes; (g) ovulation and (h) the ability of the endometrium to receive and nourish a fertilized egg.

(4) Gynecologists should be able to recognize deficiencies in seminal fluid; husbands should be referred to a urologist if their semen is not absolutely normal.

(5) Most barren marriages result from a multiplicity of factors; all must be systematically eliminated.

(6) One is likely to fail in the management of barren marriages unless he receives whole-hearted cooperation both from the husband and the wife; they must submit to the entire diagnostic study and both should follow-through with all indicated treatment for at least one year, before turning to adoption as the solution for their problem.

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THYMIC DEATH*

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The conception of "Thymic Death" is not new. It dates back to more than 300 years. The first authentic report was by the Swiss physician Felix Platter¹ who, in 1614, described the following case:

"The son of Marcus Peresius five months of age, well nourished with no previous illness, suddenly died from difficult breathing. As the father had previously lost two sons from the same malady, and being desirous of knowing the cause, we opened the chest at his request. We found the gland in the region of the throat as a large protruding tumor one ounce in weight, spongy, fleshy and replete with veins. It compressed the great blood vessels and the trachea in this spot, in which manner I concluded the infant was then suffocated."

Chevalier Jackson² has by bronchoscopy actually demonstrated narrowing of the trachea from pressure by a large thymus. This observation proves that a large thymus may cause pressure symptoms. The only question is how often does it occur. From my own experience I feel that obstruction of the blood vessels and of the trachea caused by thymic enlargement other than by a neoplasm is extremely rare. The symptoms of dyspnea, cyanosis and stridor are not specific of thymic enlargement. They can be caused by a number of conditions and one has to be very careful before one attributes these symptoms to the thymus.

The painstaking anatomical studies of Hammar³ in Sweden and of Boyd⁴ in this country have changed completely our criteria of thymic enlargement. Considering the normal weight of the thymus we are faced with the fact that this organ responds rapidly to diseases and nutritional disturbances. Within from one to seven days of illness, there is a significant reduction in thymus weight, and inanition from any cause whatsoever reduces the weight of the thymus within three days to about one-third of that in a well nourished individual. Since most autopsies are made on persons who have died from a longer standing disease or who have lost some weight, standards computed from such cases represent patho-

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logically reduced weights; and what has been called an enlarged thymus, is in reality the normal thymus of the well nourished individual. By tabulating the thymus weights of persons who had died suddenly from accident, Hammar arrived to much higher standards than those found in textbooks. According to Hammar, the thymus has a weight of about thirteen grams at birth and increases to a weight of thirty-five grams at the age of puberty. After this time there occurs a rapid reduction of the bulk of parenchyma while the interstitial tissue changes more and more into fat tissue. However, in old age, parenchymatous tissue is still found, and the occurrence of mitoses in the reticulum cells and of small Hassal's corpuscles indicates that, even after sixty, the thymus is still functioning.

The thymus is made up of three distinct tissues: (1) the medulla which contains epithelial reticulum cells and Hassal's corpuscles, (2) the cortex which contains chiefly lymphocytes and (3) the supporting connective tissue. The cortex constitutes the largest portion of the thymus in the early years of life. After puberty connective tissue and fat tissue make up the greater part.

Scammon⁵ showed that the size of the thymus, in health and in disease, corresponds to that of other lymphoid structures, i.e., lymph nodes, tonsils, adenoids, Payer's patches. The presence of a large thymus and hyperplastic lymphoid organs in young persons led Paltauf⁶, in 1889, to the conception of a status thymico-lymphaticus. Paltauf believed that young people with this constitutional anomaly have a lowered resistance and may die suddenly from trivial causes such as bathing, serum injections, minor trauma and anesthesia. Advocates of this theory explain thymic death as caused by auto-intoxication due to a perverted secretion of the thymus.

What is the evidence of a hormone secretion of the thymus? There are no anatomical findings which would indicate a secretory activity of this organ. Hassal's corpuscles are hyaline, degenerative products of the epithelial reticulum and are hardly able to produce a hormone. Studies on the functional significance of the thymus have followed the same lines of experimentation as in the investigation of other endocrine organs, namely removal of the thymus and, on the other hand, feeding or injection of thymus extract.

The results of these animal experiments are highly contradictory and whatever knowledge has been gained by them concerning the function of the thymus, is not applicable in clinical medicine so far.

Rowntree⁷ and co-workers found that in white rats, the injection of thymus extract resulted in an acceleration in growth and development of the off-

spring in successive generations. Thymus deficiency produced by removal of the thymus caused the opposite effect, namely a retardation in the rate of growth and development of the offspring. Thymus deficiency in the pullet has been shown to lead to the production of shell-less eggs.

Regarded in favor of an internal secretion of the thymus is the relationship between the thymus and other endocrine glands. At puberty the gonads undergo marked development, while the thymus undergoes marked regression. Castration causes persistence and hyperplasia of the thymus. Adrenalectomy causes a persistent enlargement of the thymus, while administration of large amounts of cortin causes marked involution of the thymus in the white rat.

Clinical and pathological observations are in accord with some of these experimental data. In 1907 Hedinger⁸ found in autopsies of cases of Addison's disease that the thymus was very often enlarged. Wiesel⁹ in 1913 observed that in cases of status thymico-lymphaticus the medulla of the suprarenal glands showed almost complete absence of chromaffin staining. The lowered resistance of individuals with thymico-lymphatic constitution is explained therefore by Morse¹⁰, Marine¹¹ and others, not by a primary dysfunction of the thymus, but by a primary adrenal insufficiency which causes a hyperplasia of lymphoid structures. Many clinicians believe today that status thymico-lymphaticus has no existence as a pathological entity.

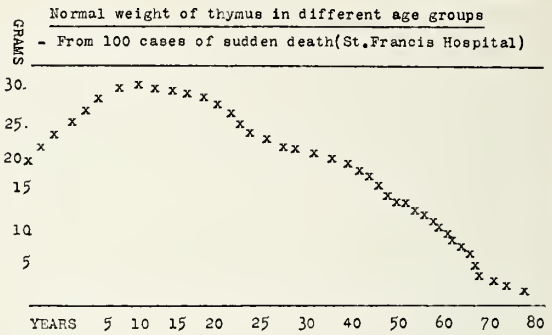
There is another disease in which a large thymus is almost always present, namely exophthalmic goiter. Rarely will a thymus weigh above sixty grams in an individual killed in an accident, while in exophthalmic goiter weights up to ninety grams are not unusual. In this disease, both the cortical and medullary substance of the thymus are hyperplastic, and again the question arises of whether the thymic enlargement is secondary to an excess secretion of the thyroid, or—as Warthin¹² believes, whether it is the expression of a constitutional anomaly which predisposes to the development of hyperthyroidism. Some surgeons advise to remove or radiate the enlarged thymus in toxic goiter, hoping that this will prevent a thyrotoxic crisis. The majority of pathologists regard the hyperplasia of the thymus in exophthalmic goiter as secondary to the hyperactivity of the thyroid, perhaps by way of the adrenal cortex which is found often atrophic in this disease. When complete autopsies including histological, bacteriological and chemical examinations are made, the diagnosis "Thymic Death" becomes less and less frequent. In most cases of sudden death careful post-mortem examination will reveal a more reasonable cause of death than a large thymus. In more than

TABLE I
Causes of Death in Fifty Cases with Large Thymus

No.	Age	Sex	Thymus Weight	Cause of Death
1	Stillborn	m	20 grams	Hemorrhage in adrenals
2	Stillborn	f	22 grams	Atelectasis of lungs
3	Stillborn	m	21 grams	Syphilis
4	Stillborn	m	15 grams	Aspiration amniot. fluid
5	Stillborn	f	18 grams	Infarcts in placenta
6	Newborn	m	15 grams	Cerebral hemorrhage
7	Newborn	m	20 grams	Intracranial hemorrhage
8	Newborn	f	21 grams	Intracranial hemorrhage
9	24 hours	m	30 grams	Atelectasis of lungs
10	5 days	m	21 grams	Bronchopneumonia
11	8 days	m	25 grams	Influenza pneumonia
12	13 days	m	15 grams	Bronchopneumonia
13	1 month	m	20 grams	Bronchopneumonia
14	1½ month	m	21 grams	Bronchopneumonia
15	2 months	m	24 grams	Bronchopneumonia
16	3 months	m	30 grams	Bronchopneumonia
17	3 months	m	20 grams	Bronchopneumonia
18	4 months	m	38 grams	Bronchopneumonia
19	5 months	m	19 grams	Interstitial pneumonia
20	5 months	m	21 grams	Pulmonary stenosis.
21	8 months	f	15 grams	Retropharyng. abscess
22	10 months	m	21 grams	Bronchopneumonia
23	11 months	m	27 grams	Tracheotomy, Broncho-pneumonia
24	12 months	m	45 grams	Foreign body, trachea
25	15 months	f	20 grams	Pulmonary stenosis
26	20 months	f	19 grams	Anesthesia
27	20 months	m	25 grams	Bronchopneumonia
28	20 months	m	30 grams	Lymph. Leukemia
29	2 years	m	20 grams	Bronchopneumonia
30	2½ years	m	25 grams	Burns
31	2½ years	m	45 grams	Interstitial pneumonia
32	2½ years	m	21 grams	Bronchopneumonia
33	3 years	m	40 grams	Bronchopneumonia
34	3 years	m	15 grams	Tonsillitis
35	4 years	f	20 grams	Burns
36	4 years	m	28 grams	Bronchopneumonia
37	4 years	m	35 grams	Bronchopneumonia
38	5 years	m	40 grams	Glioma
39	5 years	m	42 grams	Pneumonia
40	7 years	m	20 grams	Bulbar Paralysis
41	9 years	f	25 grams	Anesthesia
42	10 years	m	30 grams	Skull fracture
43	10 years	f	21 grams	Bronchopneumonia
44	23 years	f	19 grams	Anesthesia
45	28 years	m	25 grams	Influenza pneumonia
46	31 years	f	29 grams	Pulmonary embolism
47	35 years	m	35 grams	Acute alcoholism
48	39 years	m	25 grams	Ac. Myocarditis
49	41 years	m	40 grams	Coronary occlusion
50	43 years	m	21 grams	Coronary occlusion

1500 autopsies which I performed at St. Francis Hospital, a large thymus has never been found as real cause of death. In Table I, fifty cases of sudden death are analyzed. While most of these cases had a large thymus, pathological changes in other organs gave a better explanation for the sudden death than a status thymico-lymphaticus. Sudden death during infancy and early childhood was caused very often by a fulminating respiratory infection. These cases were characterized by a vague preceding history, sudden death and at autopsy by interstitial pneumonia, petechial hemorrhages in pleura, pericardium and thymus. The bacteria that we found oftenest in the diseased lungs were streptococci. Probably many of these deaths were really due to filtrable viruses

TABLE II



and the streptococci were just beginning to appear as secondary invaders.

In many cases the gross autopsy changes were almost normal and only by microscopic and bacteriological studies was the true cause of sudden death discovered.

CONCLUSIONS

1. Our standards of normal thymus weights have to be corrected. What has been called an enlarged thymus in the past, is in reality the normal thymus of the well nourished individual.

2. There is no relation between the size of the thymus gland and sudden death. While it cannot be denied that thymic enlargement may produce symptoms of compression of the trachea, thymic death from mechanical causes, except in malignant thymoma, seems to be extremely rare.

3. An internal secretion of the thymus has never been definitely demonstrated. The experimental data concerning the function of the thymus are not yet applicable to clinical medicine.

4. The term status thymico-lymphaticus in the strict sense of Paltauf is not a pathological entity and may just as well be discarded.

5. There is no treatment of the thymus by injection of any extract, by radiation or by extirpation of the thymus which would have any effect upon preventing sudden death.

6. In most cases of sudden death, a complete autopsy including bacteriological and chemical studies will detect a more rational cause of death than an enlarged thymus.

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FULL TERM ABDOMINAL PREGNANCY WITH LIVING MOTHER AND CHILD

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Extrauterine pregnancy at full term with a normal living child is relatively so rare that I wish to report the following case:

At midnight of November 15, 1939, I was called to see Mrs. J. W., age thirty, para two, who had been in labor at this time since early morning. She was from a family of eleven children. Her childhood and early life had been normal except for an attack of anterior poliomyelitis at the age of fourteen months that had left a partial paralysis of the perineal and anterior tibial group of muscles of the right leg. Reconstructive orthopedic measures had enabled her to perform the ordinary duties of a housewife. Her first pregnancy and labor which occurred eleven years before, had resulted in a seven and one-half months premature child that weighed four pounds at birth. The baby survived and is now a healthy child. Menstruation had occurred at twenty-eight to thirty-three day intervals with duration of five days. Twice in the past ten years she had had a menorrhagia of thirty days, the cause being undetermined. For the past eight years she had used no contraceptives and had thought herself incapable of pregnancy.

January 20, 1939, she had what might be termed her last regular menstruation. February 20, she began to flow and accepted it as a regular menstruation. However, the blood contained clots and was darker and more "stringy" than usual. The flow without pain continued thirty days until March 18. Early on the morning of March 20, while extending her reach she was seized with a severe pain in the right lower abdomen that caused nausea, vomiting and confined her to bed. I was called in consultation that day by her physician who thought perhaps the patient had an attack of acute appendicitis. Appendicitis was ruled out and surgery deferred. Unfortunately no pelvic examination was done at this time. A few days later her physician made a pelvic examination and diagnosed pelvic inflammatory disease. The pain subsided sufficiently so that she not only cared for her own household, but worked at times for others. She was conscious of some enlargement in the lower abdomen and when fetal movements were felt on Decoration Day, May 30, 1939, she was treated as any other pre-obstetric patient except that she had much more pain than with her first pregnancy. The pains were greatly accentuated by the fetal movements. Except for relief from sedatives she spent a rather miserable gestation period from the time the fetal movements were felt until labor began on November 15, 1939.

Physical examination revealed a woman of the slender type of average health whose distress showed that her labor was not going well. She was having cramps at regular intervals without much relief between the intervals. Heart and lungs were negative. Fetal heart was heard distinctly two cm. to the right

of the umbilicus. Position of baby was occiput anterior lying rather high above symphysis. Vaginal examination revealed a fairly rigid cervix that admitted one finger. The cervix was held anterior beneath the symphysis by a soft mass in the cul-de-sac.

The patient was given morphine grs. one-sixth and labor was allowed to continue under sedation until the evening of November 16, at which time another vaginal examination was made. At this time it was interesting to note that the cervix contracted on the examining finger at regular intervals. A diagnosis was made of occlusion of the lower uterine segment perhaps by a fibroid tumor and a Caesarean operation was immediately prepared for. At this time the laboratory report was sixty-seven hemoglobin and urine negative.

A transfusion of 500 c.c. of blood was given immediately before operation and donors were typed and prepared for another transfusion should an emergency arise.

At right paramedian incision six inches long was made. Immediately presenting itself beneath the incision was a large, dark colored, thick walled sac that seemed to fill most of the abdomen. The sac was ruptured and a six and three-quarter pound baby was extracted that shortly after had a healthy cry and seemed normal in every way. The placenta was large and had no attachment to the reproductive organs. It was attached to the mesentery of the small intestine, the transverse colon, descending colon and posterior parietal peritoneum. The hemorrhage which ensued when a small portion of the placenta was dislodged frustrated any hopes of its removal. The cord was ligated close to the placenta and removed. All remnants of the sac were removed except the placental portion and the abdomen closed tight. Intravenous fluids during the operation and 500 c.c. of blood direct transfusion immediately after the operation sufficiently combated shock. The patient left the table in fair condition.

The post operative course was stormy but never alarming. Blood transfusions of 500 c.c. each were given during convalescence. Two weeks after operation subacute intestinal obstruction seemed gradually developing. Distention became marked and x-ray revealed gas free in the peritoneal cavity. Feeling that the gas might be decomposition products of the retained placenta and with oncoming obstruction on December 8, 1939, a low midline incision was made under general anesthesia.

When the abdomen was opened the transverse colon was found adherent over a large balloon shaped mass which was round, contained gas and was limited by adhesions on all sides. When the cavity was opened, gas literally roared out followed by a liter of bloody fluid (culture subsequently revealed the fluid to be sterile). One rubber tube drain was sutured into the "abscess" and one outside in the peritoneal cavity.

Three days after the second operation a fecal fistula developed which drained for three weeks and closed spontaneously. The patient left the hospital on the fifty-third day fully recovered. The baby was raised on cow's milk formula, was vigorous and weighed nine and one-half pounds, at this time. The retained placenta had a loud suffle which gradually diminished in intensity, disappearing completely in five weeks.

One year from date the mother reports she is in excellent health, and that the baby weighs twenty-

one pounds. She states that the baby started to walk and pronounce simple words at ten months.

It would hardly be fitting, though the time may be limited, to discuss extrauterine pregnancy without some allusion to its history. The early history of extrauterine pregnancy is chiefly the operative removal of long retained fetuses. The first recorded case is that of Albucasis¹, an Arabian physician living in Spain in the eleventh century. The famous Lithopedion of Sens in the early sixteenth century, Corvax case a few years later and Bains operation in 1540 for a long retained fetus, gives a clear picture of the early history of extrauterine pregnancy. From this time on operative removal of a petrified fetus has been relatively frequent.

Charles McKnight² about 1790 was the first American to do a laparotomy for abdominal pregnancy. He was the first to leave the placenta in situ and the patient recovered. John Bard removed a nine months fetus through the abdomen fifty years before McDowell did his ovariectomy. John King in 1816 operated on a patient with abdominal pregnancy per vagina. He opened the vaginal wall and delivered the child by forceps. He did not state how he handled the placenta but one must conclude he removed it. He did not close the vagina but kept the patient in bed with feet elevated for two weeks. At the end of four weeks no evidence of the vaginal incision remained and the uterus was normal. Both baby and mother recovered.

Hoffman³ states that in 1935 Hellman and Simon, surveying the literature on full term intraabdominal pregnancy, collected 311 cases and added five cases making a total of 316 cases studied. One hundred and fifty-eight babies lived for a period of eight days or longer. Two hundred and twelve mothers lived, 101 died and the outcome of three unknown. In this series there were only eight cases⁴ in which mother and baby survived. In 236 full term or near full term intraabdominal pregnancies discussed by Cornell and Lash, the diagnosis was correct in eighty-six and in sixty-seven there was no diagnosis.

Sittner's⁵ statistics of cases of living children after extrauterine development showed that in a series of ninety-three cases, forty-five children died within a few months after birth from causes connected with their extrauterine development. Mundells⁶ figures show that for each forty-one extrauterine living babies, eight will be deformed.

Obstetrical history is well punctuated with phenomenal events. Though intraabdominal full term pregnancy may be a biological wonder its occurrence is insignificant in comparison to the heroic role the placenta and fetus must play in order to develop retroperitoneally, three of which cases have been reported (Longley⁷, Plewes⁴). Novak²⁰

summarizes the literature and reports 278 cases of combined pregnancy in which an intraabdominal and intrauterine pregnancy developed at the same time. Bondurant⁸ reports a full term combined pregnancy delivered by laparotomy, the intraabdominal baby being strong and healthy and the intrauterine baby a weak syphilitic that died. One author⁹ dilated the cervix, mistook the fundus for placenta previa, dashed his arm through it and delivered a full term intraabdominal pregnancy per vagina. Not to be outdone another obstetrician⁹ states he mistook the vaginal vault for the cervix, pressed his arm through and delivered per vagina a seven pound intraabdominal pregnancy including placenta with survival of mother and baby.

The question as to whether or not a primary abdominal pregnancy ever exists is a debatable one because of the rarity of such reported cases. Competent authorities¹⁰ have doubted that it ever occurs, although several cases appear to be well authenticated. Except for rare instances of ovarian pregnancy intraabdominal pregnancy is essentially an extruded tubal conception that has taken a new abode in the abdominal cavity without fetal death. The etiology is therefore that of tubal pregnancy.

The diagnosis of intraabdominal pregnancy is not always easy as shown by statistics. The difficulties are further enhanced if the baby is dead when the patient is first seen. McNeille⁹ states that the physical signs are of less importance in the diagnosis than an accurate history. Physical signs vary greatly in different patients but as a rule the history has a rather definite set pattern.

Clinical History in Abdominal Pregnancy: With few exceptions intraabdominal pregnancies give a history of a missed period; the patient thinks she is pregnant. This is followed by intermittent bleeding and cramp like pains in the pelvis often associated with faintness. The patient as well as her physician now thinks she is having an abortion when in reality a tubal pregnancy is being extruded from the tube into the abdomen. Following this "the patient may have short intervals in which she is comparatively, but never wholly free from symptoms⁹." Nausea and vomiting will be more constant and fetal movements more painful than in normal pregnancy. The early history of intraabdominal pregnancy is essentially that of tubal abortion.

Clinical Signs of Intraabdominal Pregnancy: 1. The signs of pregnancy are present. The uterus enlarges up to two months about as in normal pregnancy. In advanced abdominal pregnancy the uterus may enlarge to the size of a four months pregnancy. The changes in the cervix in the first eight to ten weeks are the same as those in normal pregnancy.

2. Tender mass lateral to the uterus later occupying the whole lower abdomen.

3. During the third month the cervix begins to rise and is pushed forward so that its anterior lip may rest against the symphysis.

4. In the later months the baby may seem unduly close to the hand palpating the abdomen.

Treatment: The dangers of intraabdominal pregnancy are relative to the placenta. The chief causes for maternal mortality are hemorrhage, sepsis, and shock. Intestinal obstruction and bowel perforation though infrequent, do occur. Cornell² states that intestinal disturbances are very frequent and he believes the vomiting of blood and blood in the stools is due to intestinal erosion by chorionic villi.

There is a difference of opinion as to when one should operate for intraabdominal pregnancy. Dr. DeLee is of the opinion that operation should be performed as soon as the diagnosis is made. Others wait until just before term to intervene, while others wait until the fetus has been dead for some time, feeling that the placental circulation will have diminished sufficiently to forestall hemorrhage. Statistics of the comparative mortality of the cases operated upon before and after fetal death do not prove it is better to await the latter event. Literature speaks freely of the high incidence of sepsis in intraabdominal pregnancy without mention of the type of organism or its mode of entrance. Since it is the opinion of competent authority that chorionic villi do penetrate or erode intestines and bowel perforations do occur, one might assume that sepsis may start by way of chorionic villi penetrating intestine. Certainly a growing placenta attached to intestine is a dangerous anatomical arrangement and any delay in terminating such a potential hazard will be at the risk of increased mortality.

In operating for intraabdominal pregnancy there are three well recognized methods of dealing with the placenta depending upon the conditions encountered.

1. If the placenta is not attached to vital organs and if the organs to which the placenta is attached such as the omentum, uterus, tubes or broad ligaments can be sacrificed, the organs along with the placenta are to be removed.

2. If the placenta is attached to vital organs uncomplicated with hemorrhage, remove the cord and membranes without disturbing the placenta. The question of drainage is left to the discretion of the surgeon. Statistics favor not draining.

3. If hemorrhage or sepsis or both are feared, the placenta is not disturbed. A marsupialization operation is done. The sac is sutured to the wound and packed tight with gauze after the manner of Mikulicz. Skinner¹⁰ states patients thus treated run great

risk from sepsis but it is the only thing that can be done when sepsis is already present or when there is bleeding that can be controlled only by tamponade.

SUMMARY

A case of full term intraabdominal pregnancy is reported in which a normal, healthy baby was delivered by Caesarean operation with the survival of mother and baby.

Intraabdominal pregnancy has been briefly discussed from the historical, diagnostic and treatment viewpoint.

It would not be fair to report this case without expressing my gratitude to Drs. A. C. Gulick and Paul Petit, who assisted with the operation and were consultants throughout the patient's convalescence.

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Poor health cuts into profits as much as anything else, and the employer should watch for the first symptoms of disease among his workers. Crusader.

There are approximately 150,000 blind persons in the United States, according to the 25th annual report of the National Society for the Prevention of Blindness.

RECOVERY FOLLOWING STREPTOCOCCIC SEPTICEMIA

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The field of chemo-therapy has recently given to the medical profession some valuable drugs for the treatment of infections. Probably a great majority of practicing physicians can off-hand recall a recent personal experience involving severe infection which responded promptly to one of these new agents. The following case is presented in order to place on record one more instance in which it seems entirely probable that a critically ill and doomed patient was rather quickly transformed to one of satisfactory convalescence.

The exact mechanism which these new drugs work their destruction on the bacteria is still a debatable question and I shall not discuss in this brief paper any of the theories regarding such questions. This paper shall be limited entirely to the details of a single case presentation.

CASE REPORT

The individual was a white, American male, retired mail carrier and sixty-six years of age. This individual has been remarkably free of any significant diseases, injuries or illnesses in the past.

His father died at the age of eighty-two and his mother at seventy-five, the definite causes of death not known. He has never had any brothers, however, there were seven sisters, three of whom have died. No significant diseases were present in the family history.

The patient had recently been undergoing some dental work and three days prior to my first seeing him, the dentist had extracted a left, lower, impacted,

wisdom tooth. This extraction was somewhat difficult. However, the dentist told me that no significant difficulties were encountered. The tooth was not infected.

The evening following the extraction of this wisdom tooth, the patient was somewhat "knocked-out" but slept well that night. The next day he remained rather quiet, noticing some generalized aching and swelling in the region of the extraction. However, the dentist did not feel that it was anymore than what could be normally expected. It is possible that the patient had a slight fever on this day but the thermometer was not used.

The second day the patient seemed a little feverish and did not feel very good in general. There was probably a little more swelling in the left cheek and region of the extraction. He did not sleep well that second night because of more pronounced localized discomfort in spite of taking some pain tablets.

On the third morning following the extraction and following such a restless night, the patient felt quite "all-in," very feverish, and the swelling in his cheek had extended down into the left side of his neck. There had appeared a marked swelling of his cheek, throat and pharyngeal wall which made it difficult to swallow, in fact the patient felt as if there was some obstruction even to breathing. Within a few more hours he refused to drink water because fluid came out his nose and he tended to strangle easily with each attempt. His mind was not entirely clear. He was restless, anxious and presented a picture of severe toxemia.

At ten o'clock that morning he had a hard chill, lasting about twenty minutes, following which I was called to make my first examination. At that time his temperature was 105 degrees by mouth. A picture of marked toxemia could be recognized and the swelling of his cheek, neck and throat made me realize that a severe infectious process was present. Immediate hospitalization was advised.

EXAMINATION

The patient was a robust, somewhat over-weight, intelligent and cooperative white male, who did not

Date	Temp.	Pulse	Resp.	General Condition	Blood Culture	Neo-prt. Daily	Hb. Dare	R. B. C.	W.B.C.	PMN %	SM %	LM %	Urine
Nov. 16	105R 106	120	36	Delirious at times	Short chain hem. strep.	75 gr.	100	4,860,000	13,200	82	15	3	Tr. Alb.
17	99R 101	84	20	Oriented		50							
18	98M 101	72	18	Improved		40	94	4,550,000	17,400	86	14		Neg.
19	98 101	72	18	Stronger		40							
20	98 100	72	18	Some coughing		40	89	4,350,000	12,800	79	17	4	Neg.
21	98 100	72	24	More coughing		40							
22	98 100	78	24	Deep coughing		30							
23	98 99	78	24	Less coughing		30	82	4,180,000	13,600	77	21	2	Neg.
24	98	74	24	Improved		30							
25	98	72	18	Improved		30	80	4,060,000	11,800	72	26	2	Neg.
26	98	72	18	Few min. in chair		30							

Dismissed from hospital on tenth day. Neo-prontosil discontinued.

appear to be over sixty-six years of age. He was extremely restless, fidgety, with an anxious facies, and showing evidence at times of mental disorientation. The skin was dry and hot, pulse rapid, and respiratory rate increased.

There was quite a marked swelling over the entire left cheek but most pronounced anterior to the ear and extended beneath the angle of the jaw. This swelling continued beneath the left mandible and extended throughout most of the left neck. There was only moderate tenderness in the region of the angle of the jaw.

It was difficult for the patient to open his mouth widely and examination of the throat was difficult. It could be seen, however, that a marked swelling and edema was present in the left cheek, left pharynx, soft palate and extending down toward the epiglottis. The mucous membrane of this area was intensely injected. This seemed to center in the pharyngeal wall somewhat resembling a pari-tonsillar abscess. The gums and cheek were swollen, overlapping the site where the dental extraction had been done. A small amount of sero-purulent exudate could be seen in the dental wound.

The apparent rapidity in which this swelling and edema had developed made me feel considerably alarmed about a possible respiratory obstruction.

No significant findings were demonstrated on further physical examination. Laboratory work was ordered, an ice collar applied to left neck, codine sulphate grs. one-half given by hypodermic and neoprontosil therapy begun.

A smear from the gums proved the presence of numerous "trench mouth" organisms, so neo-slavarsan .4 gms. was administered intravenously a few hours after admission to the hospital. An alkaline-antiseptic mouth wash was used every two hours. Small doses of codeine and acetylsalicylic acid were used during the two days.

Medication otherwise was entirely a matter of neoprontosil administration. This was begun orally in combination with sub-cutaneous injections, giving soda with each oral dose.

A summary of the points in question are set down here in table form.

A cough appeared on the fourth hospital day, previous to which the respiratory tract had been entirely free from any symptoms other than the threatening laryngeal obstruction as noted in history. This cough became quite severe on the fifth and sixth days and a complicating chest infection seemed very possible. Subsidence of the cough was prompt and recovery from this feature was as prompt as its appearance.

The remarkable clinical feature was the miraculous turn of events, and when the blood culture proved to be positive for a short chained, hemolytic streptococcus, it seemed even more remarkable that recovery had occurred with such promptness.

The patient remained in bed at home for eight days following his hospital dismissal. At times during this period his temperature reached ninety-nine degrees. Activity was not allowed until the patient had remained afebrile for three consecutive days.

He has since gradually resumed his normal activity and in general was feeling much stronger when last seen on December 13. On this last visit his blood count showed a satisfactory response to anti-anemic therapy.

SUMMARY

A case is presented which represented a severe streptococcus infection of the cheek, pharynx and neck. Blood culture was positive. Chemo-therapy appeared to be responsible for a prompt cure.

MANAGEMENT OF DENTAL PROGRAM FOR CHILDREN DURING GROWTH PERIOD

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WHY?—"But, doctor, they are just his baby teeth, why not pull them out when they become diseased?"

"My dear madam—baby or deciduous teeth are the only teeth the young child has. They are his permanent teeth for one-sixth of his lifetime. If they become diseased, ache and have to be pulled, the child often develops faulty eating habits. Often it is the cause for permanent teeth to come in crooked. In some cases it is the cause of failure of the jaws to develop normally. In many instances, it prevents the child from thoroughly chewing foods necessary for development during the period in his life when he is building the flesh and bone structures on which his life, health and happiness depend."

"Draining pus from abscessed baby teeth, diseased teeth and general mouth infection is often the cause of digestional upsets, fevers and abnormal psychological reactions. Mouth health and general health run hand in hand."

WHEN?—"Do children get their first permanent teeth?" "The first permanent tooth appears at the age of six. This tooth (the sixth year molar) is the first permanent molar. It comes in just behind the baby teeth. It does not replace a baby tooth. It is the most important tooth in the permanent set of teeth. At the age of seven decay has already started in more than half of them. At the age of nine, in some of these teeth, decay has reached the nerve (pulp), necessitating extraction. Ninety-two per cent of the first permanent molars decay between the ages of six and sixteen."

"Why is it so important to preserve the permanent teeth?" "It is not only a matter of health and appearance, but modern employers know that the condition of the mouth is a good index to the health of an individual. A modern employer knows that a young man, who has lost many teeth or has spongy diseased gums, is likely either to be negligent in his personal habits or to have some systemic disorder.

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These findings often jeopardize his chance of getting a job."

"General Fairbanks states that thirty per cent of those disqualified for military service are because of crippled and diseased mouths. Dental defects rank first in the causes for rejection."

"A mailing clerk in our department had just completed his college course in Washburn University. The government held out special inducement to young men wishing to take up aeronautics. This young man had dreamed of being an air pilot all his life. He filled out the necessary forms and went to Ft. Riley to take the mental and physical examination. He passed the mental tests with ease. He passed all physical tests but one. He had lost three of his first permanent molars and had a couple of crooked teeth in his mouth. His crippled mouth condition, due to loss of important teeth, disqualified him from service in the air corps. He was a pathetic figure as he stood amid the ruins of his dream castle and said, 'For goodness sakes, why didn't someone tell us about these things?'"

"Large stores, such as Macy's in New York, will not permit anyone to work behind their counters who has physical defects that detract from his appearance or efficiency. All persons applying for positions are given rigid physical examinations. If their teeth are defective, they must be corrected before they are placed behind counters. If they have defective eyes, glasses must be procured and so it is in regard to all correctable physical defects. The store spends millions of dollars in order to display their merchandise in the most effective manner. The managers say that they cannot afford to place behind their counters persons who are negligent in matters of health and appearance."

HOW? "What measures can be adopted to prevent pain, infection and loss of teeth in children in schools or institutions wherein there are many children?"

"The institution of a well organized dental hygiene program will do much toward the accomplishment of these purposes."

"Dental hygiene embraces three phases—proper diet, regular personal care and dental care."

Proper diet—By this is meant to supply meals that incorporate all the necessary elements for growth and maintenance of the body, also, fresh air, sunshine, exercise and a happy state of mind.

Personal care—By this is meant to brush teeth regularly, morning and evening. Use small brushes with bristles wide apart. Hang up separately, preferably where the sunrays can strike them. Tooth paste, powder or a dentifrice composed of equal parts of salt and soda may be used.

Dental care—Provide annual (better semi-annual) dental inspection. Have defects found and corrected

when they first start, in both temporary and permanent teeth. Have abscessed and badly diseased teeth removed or treated. Have children with a communicable disease (Vincent's infection) isolated and treated until the disease is cured.

The program should include children from the age of three to the time supervision ceases."

"It has been demonstrated that the correction of dental defects when they first start costs no more than the cost of extraction. Money spent for correction is a constructive endeavor, money spent for extraction is destructive and promotes the archaic practices of the dark ages."

The ravages of dental caries, the disease that rots the teeth and attacks ninety per cent of the people in this country, can be controlled by the intelligent use of dental facilities available in all sections in the state.

Literature and graded booklets on dental care for children are supplied gratis to state institutions and to schools by the Division of Dental Hygiene of the Kansas State Board of Health.

HISTORY OF BLOOD TRANSFUSIONS

Willard J. Kiser, M.D.

Wichita, Kansas

As a therapeutic agent, blood is as old as medicine itself.

The ancient Egyptian princes used blood baths for resuscitation and recuperation, and the custom of rushing into the arena and drinking the freshly flowing blood of dying victims prevailed among the Romans. The Egyptians, the Hebrews, and the Syrians are supposed to have practiced transfusions, and the Greek and Roman writers have been credited with witnessing it. However, as one reads this early history he is impressed with the obscure references and the vague and contradictory literature. This confusion is due apparently to the fact that during the Middle Ages the drinking of human blood was popularly considered a health restorative measure and in the older records the ingestion and transfusion of blood were frequently confused.

That a great controversy exists as to the date of the first transfusion of blood is quite evident. The writing of the Ancient Egyptians contains many references to the transfusion of blood, the works of Pliny and Celsus showing the condemnation of the procedure. The first transfusion of blood in the modern sense is said to have been attempted about 1490 at Rome, Pope Innocent VIII dying of senility,

being the recipient. A Jewish physician seems to have attempted it by transfusing him with the blood from three boys. In the test, reference as to what actually took place is not entirely clear, but the outcome seems to be apparent. Various versions seem to agree that the three boys died, the Pope died and the physician fled for his life after the failure of the experiment.

Zimmerman and Howell state that transfusion was mentioned in the fifteenth and early sixteenth centuries. Hieronymus Cordamus (1505-1576), and Pegiluis in 1593, mentioned the possibilities of transfusion of blood directly from one person to another. Andreas Libavius, who first advocated blood transfusions, described the technique similar to that used until recent times. Christopher Wren, an astronomer and architect, in 1656, injected medications into the veins of dogs by means of a bladder fastened to quills.

Richard Lohr, a physician in Oxford in 1665, transfused blood from one animal to another uniting the artery of one dog to the vein of the other dog by means of quills and silver tubes. The experiment was repeated before the Royal Society, from which point the news of these achievements spread and in the next year the first human transfusions were done in Paris by the philosopher and mathematician, Jean Baptiste Denis, and simultaneously by a disillusioned practitioner, Claude Tardi. While the experiments of Denis have been widely feted those of Tardi are recorded only in his own letters. Denis injected nine ounces of blood from the artery of a lamb into the veins of a youth who had had many venesections for an obscure fever.

Astounding improvement resulted. Denis performed his second successful transfusion giving ten ounces of blood from the femoral artery of a lamb. A third transfusion on a moribund patient was unsuccessful but the fourth fateful case brought a storm of criticism from the faculty of Medicine at Paris which brought obscurity to Denis and his favorite operation for a century and one-half. An insane patient was given two transfusion by Denis with some improvement from his mania. A severe reaction followed the second transfusion. A third transfusion undertaken at the request of the patient's wife was fatal. The enemies of Denis conspired with the widow to bring action against the transfuser on the charge of murder. There followed a long legal battle in which Denis was exonerated but was forced to leave Paris. Future transfusions were prohibited except by approval of the faculty of Medicine at Paris. Since the chiefs of the opposition were the faculty chiefs, this decree in effect prohibited transfusions.

Ten years later an edict abolished transfusions. Lohr and King in England in 1665, performed a human transfusion using sheeps blood which was well tolerated. In Germany and Italy similar experiments were performed but the Magistrates of Rome, following the French edict, forbade the giving of transfusions from animals to man.

Zimmerman and Howell note that among the cases in which transfusions were performed during this first period there were none of acute anemia. The operation was undertaken to cure constitutional disease, senility or insanity. With such poor selection of cases for transfusions reactions were severe and the incompatibility of blood was beginning to be recognized. For one hundred and fifty years the operation was abandoned except for occasionally reported cases. In 1792, Dr. Harwood performed several animal transfusions at Cambridge. In 1796, Erasmus Darwin, grandfather of Charles, advocated transfusion in cases of inadequate nutrition, but there is no record of his having performed the operation.

In general one may say that transfusion was advocated but little used from 1668 to 1835, because of inadequate methods of transfer of blood and the unsurmountable obstacle caused by coagulation of this vital fluid. In 1835, Bischoff attempted to overcome the obstacle of coagulation by defibrination. This left the blood saturated with fibrin ferment and added danger of intravenous clotting to those reactions now known as due to use of incompatible blood. It may, therefore, be concluded that from 1840 to 1900, because of the disastrous results, transfusions were not advocated except in extreme emergencies. In 1863, Blasius recorded 116 transfusions performed during the previous forty years with sixty-six successful results. In a comprehensive monograph Landois in 1875, brought the literature up to date and found that there had been 347 human transfusions and 129 cases in which animals blood was used.

In 1900, the beginning of a new chapter in blood transfusions was announced when Lansteiner announced his discovery of iso-hema-agglutinins and blood groups. With this discovery there appeared a means of rational selection of compatible donors for any given case. Landsteiner's three groups were later expanded to four and systematic measures for identification were devised by Jansky in 1907 and Moss in 1910. Additional groups have been advised by Vienna advocates but since iso-hema-agglutinins are lacking in these groups, their chief interest is apparently in heredity and medical-legal service. It is unfortunate that the Jansky and Moss classifications have reversed numbers for two of the four generally accepted groups of blood types.

With the fixation of the biological essays of blood groupings the technical methods for the transfer of blood were rapidly developed. Carrel, 1905, used arterial venous anastomosis as a method of transfusion. Crile, 1907, devised a simple arterio-venous canula which had its disadvantages but was a great advance in blood transfusion. Curtis and David's method advocated in 1911, used a paraffin coated glass receptacle, using a syringe for negative and positive pressure. Kimpton-Brown tubes which were a more convenient type of paraffin coated containers were recommended in 1913. Unger in 1915 devised a two syringe method which worked admirably.

One of the greatest single contributions in the history of blood transfusion was the demonstration by Lewisohn in 1914, that sodium citrate in quantities sufficient to prevent clotting was not toxic.

BLOOD BANKS AND PRESERVED BLOOD

In 1918, Robertson showed that citrated human blood can be bottled and preserved for as long as twenty-six days and be successfully transfused. The successful use of cadaveric blood by the Russians stimulated workers in the United States to find ways of preserving blood. Fantus and the Cook County Hospital conceived the blood banking idea which has now spread widely throughout the United States. Fantus stated that for successful operation of blood banks an average of six transfusions must be performed daily. He advised that blood be used within ten days.

McGowin studied problems connected with the preservation of blood. He found the best preservative mixture was blood ten parts, 5.4 per cent glucose thirteen parts, and 3.2 per cent sodium citrate two parts. The glucose prevented hemolysis. The potassium in the red blood cells diffused readily into plasma the first ten days, then an equilibrium was established. The PH changed from eight to seven in thirty-five days. The red cells retained ability to respire, fragility was little changed, prothrombin of plasma was not impaired at the end of fifteen days. Fantus stated that the incidence of reactions increased markedly after twelve days of preservation.

SPECIAL TYPES OF TRANSFUSIONS

1. Autotransfusion. This method is useful in cases of internal hemorrhage of uncontaminated blood. I have used it in cases of ruptured ectopic pregnancy and in splenectomies. A large spleen holds 500 to 800 c.c. of blood which may be returned to the patient with great benefit.

2. Exsanguino-transfusion. Has been advocated in cases of large amounts of circulating toxins or bacterial infection in the blood stream which removal makes room for its replacement by fresh nontoxic blood containing fresh complement and possibly

immune bodies present in normal adult blood. This procedure has been used most frequently in cases of septicemia and toxemia, in the treatment of severe burns and in various form of poisoning such as carbon monoxide poisoning.

3. Immunotransfusion. Given from donors who had been previously artificially immunized with either specific organism causing infection in the patient or with nonspecific vaccine. Favorable results are reported in the treatment of septicemia.

4. Irradiated Blood. Hancock and Knott in 1934, irradiated blood and then transfused. Each ten c.c. of blood was irradiated with ultra-violet light for thirty seconds. This must be considered a highly specialized form of transfusion and its benefits somewhat open to question.

5. Convalescent Blood. In the field of contagious diseases, convalescent blood often brings about rapid improvement with fall in temperature by crisis. This occurs with or without anemia. The immune body content of blood has been determined at various times but it has always been found to be less than the therapeutic sera which are on the market. However, in respect to safety and clinical response obtained, convalescent blood has certain advantages.

6. Transfusion of serum and plasma. The intravenous use of serum and plasma instead of whole blood is not new. The number of contributions on this subject is greatly increased in the last few years. As long ago as 1855, Buhl observed a number of burned patients and noted changes in those were the same as those produced in chlorea, that is, there was in both the concentration of blood with an increase in the concentration of the red blood cells and the extreme dryness of the skin and the mucous membrane.

In 1881, Pappainer studied four badly burned patients as well as experimentally burned rabbits. Handicapped as he was by older analytic methods, his observations and conclusions proved to coincide with more recent ideas. Blood plasma has been found to be better than blood serum because it can be given without matching and does not cause reaction such as is found in giving of serum.

The plasma has been given in concentrated form to build up or sustain blood volume as in cases of acute shock or hemorrhage; to replenish deficiencies in blood protein as in cases of inadequate diet by mouth or in very ill patients having been given large amounts of intravenous fluids; for hypertonic effect in reducing edema; and in a miscellaneous group of cases, particularly, in the treatment of burns. In the burns when the process of blood plasma in the treatment of loss of large surface causes a great concentration of blood. The giving

of blood plasma has been found to work some rather miraculous results.

The recent development of a practical and inexpensive desiccation process solved the main problems of its use. First, storage difficulties practically cease to exist. Second, serum or plasma stored in the dry so-called lyophilic form will not support bacterial growth at any temperature. Third, all biological properties are preserved to a remarkable degree. The use of a desiccation process for the preservation of unused plasma from a blood bank makes a very useful addition to the services obtained from a blood bank.

The value of a special blood transfusion service using stored blood was brought out in the battle of France. The blood was taken from Universal donors and was flown out from England in pint bottles. Two weeks was regarded as a safe limit up to which the blood could be given and no ill effects were noted from using such stored blood. Plasma in fluid and dried form was on the point of being used at the time of the evacuation of France. This is now being used in war surgery.

In conclusion following such a brief review of the subject of blood transfusion, it is interesting to reflect that:

1. Only since 1920 has blood transfer from one person to another ceased to be a curiosity in hospitals.
2. Modern blood transfusion is a comparatively safe procedure. Practically all fatalities today can be attributed to failure to utilize the knowledge we now possess as regards blood transfer.

Brown rice, which goes through a less extensive milling process than white rice, contains four times as much vitamin B₁ and three times as much minerals as the white variety, Hygeia, The Health Magazine reports.

CARDIAC METASTASIS FROM CARCINOMA OF THE THYROID

Wendell A. Grosjean, M.D.

Cecil D. Snyder, M.D.

Winfield, Kansas

Carcinoma of the heart is usually metastatic and is not particularly rare. The probable reason why secondary cardiac growths do not occur more often in otherwise widely disseminated neoplasms is that the anatomy and the constant activity of the heart are such that tumor emboli are not so likely to lodge in this organ as in others.

Metastases to the heart from all of the main organs have been reported¹. Many of these reports, however, deal with instances of one case only. The literature was carefully reviewed in 1936 by Jacobi and Seltzer² relative to cardiac metastasis from carcinoma of the thyroid and they were able to find twelve cases to which they added one. These authors stressed the fact that two types of cardiac involvement were found. One type is the result of direct extension from the thyroid veins by way of the vena cava, the right cardiac chamber being filled with thrombotic tumor material. This, they feel, should be called a neoplastic thrombus rather than a cardiac metastasis. The other type is truly metastatic in character. The veins do not contain gross tumor thrombi. Metastatic foci are widely separated and metastases in the heart are deep within the myocardium. Their own case, and eight of the twelve cases reviewed by these authors were of the latter type.

The following case belongs also to this type:

REPORT OF A CASE

The patient, C. H., a seventy-two year old white female, was admitted to William Newton Memorial

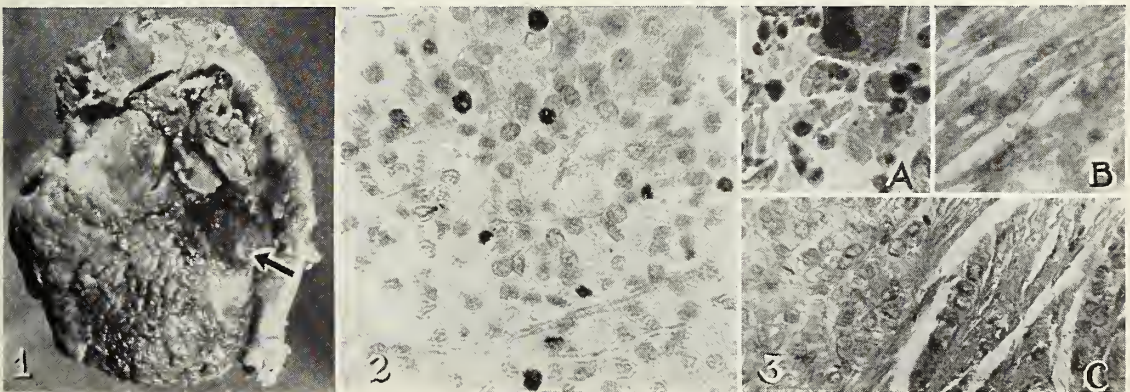


Figure 1. Metastatic nodules cover all surfaces of the heart and extend onto the aorta. Note the large nodule on the surface of the left ventricle (arrow). Figure 2. Section taken from encapsulated tumor removed in 1926. Hyperchromatic nuclei and mitotic figures are quite evident. Figure 3. Three sections from tumor removed in August, 1940, showing: (A) Anaplastic giant cells; (B) Spindle cells with sarcoma-like structure; (C) Epithelial characteristics similar to those of the tumor removed in 1937 except that there is invasion of muscle.

Hospital, November 10, 1940, complaining of choking sensation, shortness of breath, difficulty in swallowing, pain in the neck, cough with expectoration of blood tinged sputum, and weakness. Her past history revealed that she had had a subtotal thyroidectomy in 1927 for toxic goiter. At this time she had exophthalmus and other signs and symptoms of Grave's disease. The gland removed was adenomatous. A good recovery was made following the operation, including recession of the exophthalmus. She remained in good health until October, 1936, when a nodule developed in the mid-line in the old thyroidectomy scar. She complained of nervousness, fatigue, and tachycardia. Three months later a well encapsulated growth, four cms. in diameter, firmly adherent to the trachea and extending up between the ribbon muscles, was removed. This was considered a benign adenoma. (Fig. 2.) In June, 1940, the patient first noticed some difficulty in swallowing and the feeling that there was a lump in the throat. In a few weeks recurrence of the nodule in the neck was noted. Cough, nervousness, fatigue and recurrence of exophthalmus developed. In August, 1940, largely for the relief of dysphagia and respiratory obstruction, the tumor was resected (Fig. 3) and x-ray therapy instituted. There was prompt recurrence of the tumor but the patient remained ambulatory until the present admission (November 10, 1940). All symptoms became worse and after nine days the patient died.

Physical examination revealed an elderly obese woman who was dyspneic and apprehensive. There was marked exophthalmus and a large irregular tumor mass bulging in the suprasternal notch. The tumor was hard and fixed to both sides of the mid-line, but soft in the center. There was frequent expectoration of blood tinged sputum. Breath sounds were replaced by numerous crackling rales throughout both lungs. The heart sounds were not audible and the pulse was rapid and weak. There was no edema. No other findings of significance were made.

The observations at autopsy were as follows: The body was that of a moderately obese, seventy-two year old female. Considerable exophthalmus was present. The neck was enlarged, particularly on each side of the trachea where distinct induration could be felt. There were also two semi-fluctuant bluish colored

nodules, measuring two and one-half centimeters in diameter, which protruded in the supra-sternal notch. In front of and on each side of the trachea, but not entering it, was a fleshy colored tumor mass adherent to the surrounding structures. It was hard in consistency with large areas of softening. There was no direct extension into the mediastinum. The pleural cavities each contained approximately 500 c.c. of bloody tinged fluid. Both lungs were studded with small nodules, a few of which were present on the parietal pleura posteriorly and laterally and large numbers were present on the diaphragmatic pleura. The lung on cut section showed extensive invasion throughout the parenchyma by neoplastic tissue. Many firm nodules were present in the mediastinum. The pericardial cavity contained thirty c.c. of pinkish colored fluid. There were no adhesions between the pericardial sac and the heart and the surfaces of the pericardial sac were smooth and glistening. The heart (Fig. 1) weighed 530 grams, was soft and flabby in consistency, and had a bright reddish brown color with a hob-nailed appearance due to extensive distribution over all surfaces of rather friable nodules which averaged approximately seven millimeters in diameter. These were less marked over the right atrium. There was a large protruding nodule on the anterior wall of the left ventricle which measured two centimeters in diameter. The chambers of the heart contained post mortem clots. The valves were normal. The myocardium of the right ventricle was almost entirely replaced by two large nodules, one measuring two and the other measuring two and one-half centimeters in diameter. Much fatty degeneration was evident beneath the epicardium. A small nodule, measuring one centimeter in diameter, was present near the apex and it extended into the intra-ventricular septum. It appeared to involve the endocardium. In the myocardium of the left ventricle was one large nodule measuring two and one-half centimeters in diameter extending through to the endocardium over which a small mural thrombus had formed. Much fatty degeneration was also evident here. Numerous small nodules around the periphery in the epicardial fat were present. Nodules on the atria were superficial. No gross invasion of the muscle was seen. Some of these nodules extended onto the arch of the aorta. Other structures of the

heart were normal except that the foramen ovale was anatomically patent.

The superior vena cava contained no tumor thrombi. There were neither tumor metastasis to any of the organs in the abdominal or pelvic cavities, nor pathologic processes pertinent to this presentation. Metastasis to the bones was not demonstrated. Microscopic sections of the tumor (Fig. 4) showed it to be a highly undifferentiated type of growth, the details of which will be discussed later. All nodules on the heart were neoplastic (Fig. 5A). Destruction of the myocardium by the tumor and the fatty degeneration which had occurred were so extensive that

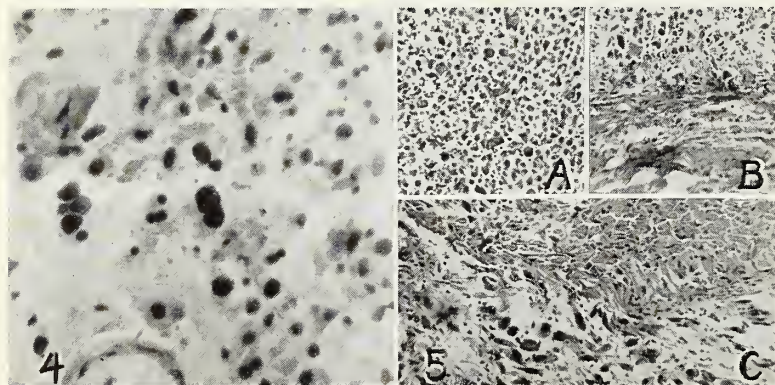


Figure 4. Section from the autopsy specimen. Hyperchromatic, multinucleated, and multilobulated giant cells varying in size and shape are numerous. The cell outlines are indistinct. Figure 5. (A) Section from one of the small nodules on the surface of the right ventricle. (B) Section from the left auricle. Tumor cells do not invade the muscle. (C) Section from the left ventricle showing invasion of the cardiac muscle.

little muscle tissue was left (Fig. 5B). In addition to the widely spread tumor growth in the lung, the alveoli were filled with polymorphonuclear leukocytes. Anatomical diagnosis: Carcinoma of the thyroid gland with metastasis to the heart, mediastinum, lungs and pleura. Broncho-pneumonia.

COMMENT

There are two interesting features relative to this case. First, one wonders how such extensive destruction of the myocardium can occur with so few changes in the function of the heart. It will be recalled that the patient was ambulatory until nine days before death. It has been shown that this is the rule (Yater¹) unless the conducting system is involved³. Numerous explanations have been given for this phenomenon, but none seem quite satisfactory. However, the assumption that the slow development of the tumor may give time for compensatory changes, seems the most logical.

Second, this tumor is an example of a giant cell carcinoma which had been classified as a sarcoma or carcino-sarcoma until Clute and Smith^{4,5}, Herbel⁶, Haagensen⁷, and others were able to show the transition from the epithelial elements to the bizarre morphological changes which have occurred. The consensus is that sarcoma of the thyroid has yet to be proved. Ewing⁸ says, "The occurrence of true sarcoma (of the thyroid) in man still requires demonstration."

This transition is shown particularly well in this tumor. In January 1937, a well encapsulated growth was removed which was thought to be a benign adenoma. Even though the capsule was entirely intact there is little doubt that this was already an adenocarcinoma (malignant adenoma), (Fig. 2.). There are cords and nests of epithelial cells with acinar formation but no colloid. Atypical mitotic figures are numerous. There is a tendency toward lobulation. Sections from the tumor removed in August, 1940, (Fig. 3.) show some fields almost identical with sections taken in 1937 except that there is invasion of the muscle. Other fields on the same specimen show spindle-cell formation and in places a combed appearance around the blood vessel so characteristic of sarcoma. Still other fields show a variety of cells of varying shapes and sizes set in a very delicate and scanty stroma. The structure is beginning to assume that of the autopsy specimen.

The outstanding and predominant feature of sections taken at autopsy (Fig. 4) is the extreme degree of anaplastic overgrowth. There is great variation in size, shape, and staining reaction with many bizarre formations. Many of the cells are multinucleated giant cells; often the nucleus is multilobulated and hyperchromatic. The cytoplasm is usually homogeneous and the cell outline indistinct. Vascular spaces are numerous and large. The microscopic

picture of all metastatic lesions is entirely of this giant cell type of tumor. These tumors, as suggested by Lahey, Hare, and Warren⁹, have a characteristic history. They occur more often in females over fifty, are usually rapidly growing, and arise from long standing adenoma of the thyroid.

By observing the microscopic progress of this neoplasm over a period of years, there can be little doubt of its epithelial origin and one necessarily concludes that this giant cell carcinoma is a highly anaplastic type of adeno-carcinoma.

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PSEUDOMUCINOUS CYSTADENOMA

L. A. Calkins, M.D.

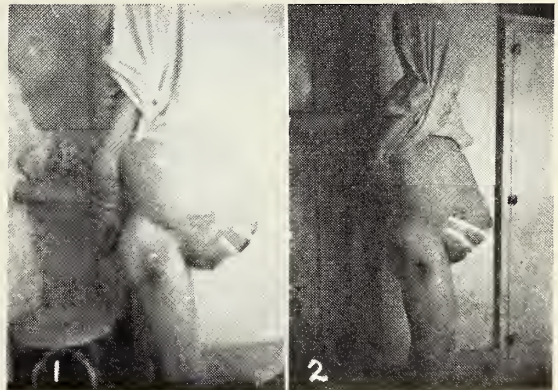
Kansas City, Kansas

Otis H. True, M.D.

Hays, Kansas

CASE REPORT

A married woman, age forty, was first seen by a physician in February, 1937. At that time she was complaining of fullness in her abdomen. Examination revealed a large pelvic mass and she was referred to the University of Kansas Hospital for treatment.



Patient before and after paracentesis are presented.

(Continued on Page 264)

President's Page

To the Members of The Kansas Medical Society:

Having returned from our national society where there are always contacts which stimulate one to greater effort in his chosen profession, one is always amazed at the progress made from year to year in the methods of recognition and treatment of disease.

Especially is this noted in the fields of chemo therapy and the vitamin deficiencies. One must also note the transition of transfusion methods from whole or citrated blood, available from suitable donors and stored in blood banks, to the latest dessicated and fluid plasma preparation, as yet expensive and almost prohibitive; but in the American streamlined way, means will be perfected making such advanced methods available to all.

For the information of Society members, the personnel of our various committees is being worked out and in the near future will be completed and announced through the proper channels.

I wish to express my appreciation to the members offering valuable suggestions and also to those responding for committee duty and may add not one to date has attempted to escape duty.

Let us enter into the new year of service with a determination to maintain the already advanced position of Kansas in medicine, and if at all possible, and "I believe it is," let us pioneer further and establish more guide posts that may be observed and followed.

Sincerely,

A handwritten signature in cursive script that reads "Clyde O. Blake Jr". The signature is fluid and elegant, with a long horizontal flourish at the end.

President, The Kansas Medical Society.

EDITORIAL

PHYSICAL FITNESS

The subject of physical fitness is to receive considerable attention as national defense develops and goes forward. According to figures thus far compiled a high percentage of the young men examined for selective service have been found deficient in one way or another. There is a legitimate medical interest in the causes which bring about maldevelopment. As the subject receives more official notice the extent of research and analysis may be expected to expand. This should be done upon a scientific basis with the end in view of conserving the health of the entire population.

While the study of the subject of physical fitness is essentially a medical problem, no worth while researches can be carried out without allied agencies necessary for large group investigations. The study must be begun among the early age groups, such as pre-school children, and be carried on through the entire public school system, into the universities, factories, stores and among the farm population. The physical examination of children in schools should be coorelated by a study of the background of the individual child. This will require medical social investigation. It is only through such a scientific approach that trustworthy observations can be made and conclusions drawn as to the causes of physical deficiencies and methods devised for their correction. A constantly operating follow-up system from the primary or first grade in school, under medical supervision, will be necessary to direct the physical development of children toward a maximum degree of fitness.

Many high schools, colleges and universities now have well organized physical education departments with trained personnel, and affiliated with physicians who act in an advisory capacity in cases of defective physical development. The scrutiny of any incoming class of college freshmen is convincing evidence of the need of beginning the study of physical development at a far earlier age.

The logical, and in fact the only available agency for the physical guidance of youth is the public

school system, with advanced institutions of learning carrying on the program. In such an enterprise our present national conception of athletics, that of teams of champions competing with champions from other schools, must be changed to a program of athletics for all. That a few of the more highly physical students should get all of the athletic training is absurd. Diversification of athletic sports throughout our entire educational system and including the universities, should contribute greatly toward better physical development and better health.

The Physical guidance of growing children should be looked upon as a plan for the conservation of our most valuable national resource, our human resource. A scientific approach and an educational development is essential to the advancement of the physical well being of the nation.

HYPERTENSION

Hypertension still remains one of the unsolved problems of medicine. Its etiology is unknown, measures to influence its course are doubtfully efficacious. Its course is slow and gradual, but dreadfully persistent. Statistics from the great life insurance companies indicate that the mortality of individuals with hypertension is trebled over the normal death rate. It is a great source of disability after the age of fifty years. The termination is caused by failure or injury to the vascular beds of the heart, the kidneys or the brain, resulting in heart failure, nephritis or cerebral hemorrhage.

If these events occur in a short period of time rapidly culminating in dire consequences the course is "malignant"; if progress is slow with a long symptom-free stage it is classified as an "essential" type. Robinson and Brucer¹ found systolic hypertension four times as common, and diastolic hypertension seven times as common in the broad chests as in the linear types. Temperamentally the hypertensive individuals are extroverts clamoring for worlds to conquer, frequently capable of great accomplishments, at times having so many irons in the fire that none are effective. This display of energy has many features simulating hyperthyroidism. The clinical features suggest irritation of the organism. This un-

known factor "over a long period of time irritates the arterioles of a vulnerable individual²" resulting in hypertension. This illuminating (!) observation apparently summarizes the present state of our knowledge of this condition.

This impasse should not discourage our attempts to investigate the problem. In the very recent past, biologic discoveries have made epochal progress in the management of diabetes and pernicious anemia, and chemotherapy has conquered some fatal infections. So it seems that an effective approach may yet be found for the management of hypertension. Indeed the observations of Goldblatt that hypertension follows circulatory interference of the kidney, demonstrated pathologically and reproduced experimentally; the association of high blood pressure with pyelonephritis³; the favorable response to sympathectomy in selected cases, and the reduction of blood pressure by use of renal extracts⁴ mark recent progress which may lead to a specific agent. Even the remedies already available have brought worthwhile results: moderation in living, proper diet, the favorable response frequently following weight reduction in the obese, sedation, vasodilatation by nitrates, sulphocyanates and purines. These factors warrant that the pessimism and gloom surrounding the diagnosis of hypertension may be replaced by an enlightened optimism.—From the Nebraska State Medical Journal, February, 1941.

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OFFICIAL PROCEEDINGS

FIRST REGULAR SESSION OF THE HOUSE OF DELEGATES

The first regular session of the House of Delegates was held at the Hotel Jayhawk in Topeka on Tuesday, May 13, 1914, commencing at 8:00 p.m.

Dr. F. L. Loveland, President, presided, and called the meeting to order.

Upon a motion by Dr. C. C. Nesselrode, Kansas City, the report of the Committee on Credentials, the roll call of delegates and the reading of the last minutes were dispensed with.

Explanation was made of the method of registering and seating delegates.

Dr. A. W. Fegty, Wichita, was appointed sergeant-at-arms, and reported a quorum of the House present.

Dr. Loveland announced the appointment of the following reference committees and outlined the procedure for presentation and adoption of the reports of the reference committees: Reference Committee on Reports of Officers and Councilors—Dr. Philip W. Morgan, Emporia, Chairman, Dr. A. W. Fegty, Wichita, and Dr. Earl L. Mills, Wichita; Reference Committee on Reports of Committees and Resolutions—Dr. John M. Porter, Concordia, Dr. E. L. Vermillion, Salina, Dr. F. C. Taggart, Topeka, and Dr. Robert Sohlberg, McPherson.

Dr. Morgan presented the following report on behalf of the Reference Committee on Reports of Officers and Councilors:

TO: THE HOUSE OF DELEGATES:

SECRETARY'S REPORT

The writer still feels that the interests of the Society will be best served by abandoning the precedent of re-electing officers with exception of the treasurer.

Defense efforts and legislative activities took precedence over nearly everything in the last year.

Your secretary talked on subjects of scientific medicine and various organization phases before the Medical Auxiliary, the Women's Field Army for the Control of Cancer and many county medical societies.

It is recommended that efforts be made to continue the meeting of the county society secretaries.

REPORT OF THE DEFENSE BOARD

The Defense Board reports a year in which there have been few cases of defense and none within the last six months.

It should be again repeated that only those members who have paid their dues are eligible for the services of this Board.

REPORT OF THE EDITORIAL BOARD

The Editorial Board represented by Dr. W. M. Mills reports on the period May 1, 1940, to May 1, 1941. The Journal is self sustaining and maintains a surplus over total running expenses. The Journal fund surplus was increased from \$1,498.49 in 1940 to \$1,582.18 in 1941. Increased expenses from heavier cover and inside stock and certain other additional features have been made during the past year. The Journal receives some 140 publications each month and sends them to the library of the University of Kansas Medical School. Over fifty books received this year for review were turned over to The Stormont Medical Library.

The Editorial Board believes a larger number of articles can be prepared by members for publication in the Journal and similar medical publications.

The Board asked for criticisms and was liberal in thanking all contributors.

Dr. Loveland voiced the appreciation of the House of Delegates to Dr. Mills and the Editorial Board for their work in editing and publishing the Journal.

REPORT OF THE EXECUTIVE SECRETARY

Mr. Munns' report is so concise and comprehensive that this committee feels it should be printed in its entirety and recommends careful study by each member of the Society; however, for the sake of brevity we have attempted to summarize it for presentation at this time. If we have passed over or have stated too briefly any points on which he wishes to elaborate, we wish him to feel free to make additional remarks. The report begins with a resume of some sixty bills introduced at the last session of the Legislature pertaining to public health and medical care together with the disposition made of them. The complete list was sent to each county society to be read in open meeting. A complete report may be had from this source or from the report to be published in the Journal.

Medical preparedness has also been a major activity of the Society the past year. Kansas plans have operated efficiently and have received favorable comment from the War Department. Worthy and favorable comment was a low percentage of physical examination rejections by the Induction Boards.

Ninety-five per cent of Kansas physicians have returned their American Medical Association questionnaires. It is hoped that the remaining per cent may be completed shortly.

Another questionnaire to be carried out through the county societies shortly will be information relative to the number of physicians in the several communities who can and cannot be spared for military duty.

Adjutant General McLean, Major Montgomery, Director of Selective Service in Kansas, and Lieutenant Colonel Seth A. Hammell, Medical Director, have cooperated to the fullest extent in the preparation and operation of the selective service program for Kansas. They have approved almost every suggestion the medical profession has made and have made possible a number of arrangements to be adopted to the advantage of physicians donating their services which would otherwise have been almost impossible.

Progress has been made on the subject of indigent medical care. Many societies have adopted free choice plans for that purpose and others have extended and improved present plans.

The Kansas State Board of Social Welfare issued last May a procedure which greatly simplified matters incidental to financial participation in indigent plans. Efforts are being made to persuade the Federal Government to coincide its regulations for financial participation with the practical ones adopted by the Kansas State Board of Social Welfare. The Kansas State Board of Social Welfare is considering the possibility of employing a full-time consultant on indigent medical care who would be available to assist the various counties and county medical societies in the adoption and operation of plans for that purpose.

Post-graduate activities have continued along similar lines as in recent years. State-wide courses on cancer and tuberculosis have been held, and similar courses are being planned on several other subjects. A five-day course on heart disease was held in Emporia in October and a technicians seminar was held in Topeka in December. The Kansas Obstetric and Gynecological Society and the Kansas Heart Association were organized and are working with marked advantage to those interested.

The passage of an enabling act for group hospitalization by the Legislature will permit experimental work in this direction within the next few years. This is thought to be especially advantageous to industrial areas but may also be of value to numbers of persons in other walks of life. It is

presumed that the Society will cooperate in this and render all assistance possible for successful ventures.

The Society has attempted to maintain close liaison relationship with the Board of Social Welfare, the Board of Administration, the Board of Health, the Commission of Revenue and Taxation, the Division of Labor and Industry, the Industrial Development Commission, the Governor's office, the Attorney General's office, The Kansas Work's Project Administration, the Kansas State Hospital Association, the Kansas Pharmaceutical Association, the Kansas State Dental Association, the Kansas Conference of Social Work, the Kansas Veterinary Medical Association, the Kansas Association for the Prevention of Blindness, the Kansas County Commissioner Association, the Kansas State Nursing Association and various other agencies and organizations interested in public health and medical care, and efforts have been made to acquaint these agencies with the services the medical profession is able to offer.

The Kansas State Board of Health has cooperated with the Society in all ways possible and its program has been of great assistance in all fields pertaining to public health. Its pneumonia control program was improved and extended during the past year, incubators were placed in a number of additional hospitals, financial assistance was provided for the programs of Society committees, an exhibit truck and additional full-time personnel were obtained to provide more extensive participation in lay-educational activities, full-time health units were established in several additional counties, plans were made for participation in public health activities incident to the national defense program and various other programs were commenced and completed. Through the assistance of Mr. William E. Scott, the attorney member of the Board, considerable legislation of public health importance was obtained in the past session of the Legislature. The State is fortunate in having personnel of the type now serving as members of the Kansas State Board of Health.

The activities and projects of the various committees are mentioned but since these are reviewed by the other reference committee they will not be detailed here except to say that the central office has been fully cooperative and has been of great assistance to the committees.

There has been full cooperation with the Kansas State Board of Health, The Kansas State Board of Medical Registration, the Women's Auxiliary, the Women's Field Army, and the new organization recently formed, the Kansas Medical Assistants Society.

Two members of the Society have been honored by election to national presidencies during the past year. Dr. J. L. Latimore was elected as President of American Society of Clinical Pathology, and Dr. F. L. Loveland as President of the National Conference on Medical Service.

New county medical societies have been chartered in Chase and Morris counties during the year.

Resignations of two councilors were received: Dr. A. C. Armitage resigned as councilor of the eleventh district and Dr. G. W. Hammel as councilor of the ninth district on account of removal from the district and state.

The membership in the Society has not materially changed during recent years. The present membership is 1372.

Expenditures for the past year have been divided as follows:

The General Fund—\$13,401.15. This includes salaries, travel, other meetings, committee expenses, legal expenses, state meeting and general office expense. The defense fund—\$884.37. The Special Fund—\$2,076.92. A total of all expenses \$16,362.44.

The Journal has continued to operate in good financial condition. It pays its own expenses including one full-time assistant in the central office. Much credit is due to Dr. W. M. Mills, Dr. L. E. Eckles, Dr. L. R. Pyle, Dr. R. B. Stewart, and Dr. D. N. Wakeman for their management and supervision of the publication. That they spend a considerable portion of their time in that regard without any form of compensation should entitle them to the appreciation of the entire membership.

The following paragraphs are directly quoted from the executive secretary's report:

"The central office personnel has consisted during the past year of Miss Joyce Ryerson, Mrs. Mareel Todd, and the writer. Miss Ryerson and Mrs. Todd have worked earnestly and efficiently in all matters in which the Society is interested and have made many contributions to the organization of the central office. The Council has made available the employment of additional part-time assistance whenever necessary.

In conclusion we would like to pay tribute to the excellent administration of Dr. Loveland. His year was filled with many difficult problems and duties and those who worked with him know that he placed the Society foremost amongst his activities during that time. Hours were spent each working day in the central office and he gave almost full time service during the session of the Legislature. His counsel, advice, and wide acquaintance and his excellent ability were responsible for many of the accomplishments during his term. We greatly enjoyed working with him and feel that every member agrees that he has been a particularly capable and efficient President. Tribute should likewise be paid to the other officers, councilors, committees, and members who have attended meetings and given freely of their time and money and in many other ways contributed to the welfare and progress of the Society."

Mr. Munns closes by expressing his appreciation of his good fortune in being associated with the medical profession. He has felt the work a crusade instead of a job. Excellent and unselfish attention for public benefit make it possible for programs to succeed and for one to have the philosophy that any loss in medical experiences simply means that the opponents are in error. Mr. Munns expresses regret for any mistakes made and expresses appreciation for the numerous courtesies and memories given him.

COUNCILOR REPORTS

First District—J. W. Randell, M.D.

Ninety per cent of the doctors of medicine are members of the societies.

Second District—O. W. Davidson, M.D.

During the past year military preparedness and medical legislation were matters of first importance.

Third District—L. D. Johnson, M.D.

Fourth District—J. L. Lattimore, M.D.

Fifth District—M. Truehart, M.D.

Sixth District—W. P. Callahan, M.D.

All reported a satisfactory year.

Seventh District—F. R. Croson, M.D.

In Washington County 452 children were immunized for diphtheria by cooperation between the Kansas State Board of Health, the Washington County Medical Society, and the county commissioners. Jewell County Medical Society likes its second year of Farm Security Administration. Riley County Medical Society honored Dr. J. D. Colt, Sr., Dr. W. H. Clarkson, and Dr. W. M. Reitzel for forty years service in that society. A full time county health unit was also approved by that county. Clay County Medical Society sponsored a crippled children's clinic.

Eighth District—L. S. Nelson, M.D.

Being better informed enabled the members of this district to have fewer mistakes than in previous years. In facing contract practice problems it is suggested the county societies, rather than individuals, consider them to avoid the silent entrance of commercial competition into the picture. Constructive criticism was repeatedly mentioned as having virtue in the societies.

Ninth District—Haddon Peck, M.D.

"Generally speaking the Farm Security Administration plan for medical care has not been satisfactory, to doctor or patient, and a few doctors of the district have refused to continue it for the second year."

Tenth District—C. D. Blake, M.D., relieved by Otto A. Hennerich, M.D.

Everything reported satisfactory.

Eleventh District—A. C. Armitage, M.D.

Everything reported satisfactory.

Twelfth District—Geo. O. Speirs, M.D.

"It has been voted to continue the Farm Security Administration medical plan another year with broader service and increased payment per family. There are several towns in this district without physicians, but with the distribution of hospitals and good roads we do not feel there is lack of good medical care."

This reference committee directs attention to the fact that many councilor district made no mention of the status of Farm Security Administration plans, or the number of men in military service, or deaths, or percentage of physicians belonging to societies, or other factual matter which such reports might include. Most of the reports mentioned cooperation in legislative and community activities which is commendable. This committee begs to suggest that each councilor's report hereafter have some few questions to answer so that it may thereby be a means of comparing situations as they exist over the State. It is obvious that hitherto no such plan has existed.

Respectfully submitted,

REFERENCE COMMITTEE ON REPORTS
OF OFFICERS AND COUNCILORS

Dr. Philip W. Morgan, Emporia,

Chairman

Dr. Earl L. Mills, Wichita

Dr. A. W. Fegty, Wichita

The report of the Reference Committee on Reports of Officers and Councilors was presented for adoption by sections. All sections and recommendations in the report were adopted.

Upon a motion made by Dr. Morgan, and carried, the report of the Reference Committee on Reports of Officers and Councilors was adopted as a whole.

Dr. Geo. M. Gray, Kansas City, then presented the report of the Treasurer. Following Dr. Gray's report Mr. Munns gave an itemized report of the expenditures during the past year. Dr. Gray explained more in detail the work of the Journal, and commended the Editorial Board for its excellent work. Upon a motion by Dr. J. F. Gsell, Wichita, and carried, the report of the treasurer was accepted.

Dr. Porter, Chairman of the Reference Committee on Reports of Committees and Resolutions, then presented the following report which had been prepared by that committee:

TO: THE HOUSE OF DELEGATES:

THE COMMITTEE ON AUXILIARY

Reports an increase in membership and several new counties organized. They have concentrated this year on reaching the public by means of public relations teas, cancer control through the Women's Field Army, encouragement of vaccination and the further use of Hygeia by the laity.

THE COMMITTEE ON CONTROL OF CANCER

This committee has placed its entire emphasis on lay and professional education and has had excellent success. In reaching the laity there has been more than the usual number of public meetings with use of sound motion pictures, film strips, and speakers from numerous sources. The work this year was concentrated on malignancy of the breast and uterus. In the matter of professional education, the cancer section has appeared regularly in the Journal, an exhibit of cancer control in Kansas at the meeting of the American Medical Association has been planned, and one meeting on cancer control has been recommended for each county society yearly. A postgraduate course was held at a number of points throughout the state but the attendance by the profession was somewhat disappointing.

THE COMMITTEE ON CHILD WELFARE

This committee has made a survey of the state in regard to respirators and in some instances has encouraged purchase of new ones by civic clubs. They have served as consultants to the State Board of Health in various ways and have assisted in establishing child health demonstration in field training in four Western Kansas counties.

THE COMMITTEE ON CONSTITUTION AND RULES

This committee reports no amendments to the constitution to be considered at this session. They recommend a further trial of the present review committees for reports of officers and constitutional committees. If this plan as utilized in 1940 and 1941, meets with the approval of the Society, it should be incorporated in the constitution and by-laws. They further report that a booklet will soon be available to the membership, containing the original charter and the present constitution and by-laws.

Dr. Fegly, chairman of the committee on constitution and by-laws reported orally that the following additional suggestions have been made by the committee in order that the officers, delegates and members of the Society may seriously consider and later express to the central office or to the committee their opinion on two important matters which might in the spirit of democracy be an improvement in the work of the Society:

1. The limitation of the number of consecutive years which a member may serve on any given committee.

2. The limitation of the number of consecutive terms which a member may serve as delegate to the American Medical Association.

He also reported that the committee feels both of these matters are debatable but that it believes it would be interesting to note the reaction to these suggestions.

THE COMMITTEE ON ENDOWMENT

This committee advocates an enlargement of our field of activities to secure wherever possible, funds for research,

surveys, scholarships, and similar activities as well as direct endowment. They have co-operated with the University of Kansas Endowment Association in securing legal services and in making certain mailing lists available. They offer this help and that of their own committee to anyone who is interested.

THE COMMITTEE ON CONSERVATION OF EYESIGHT

This committee reports considerable detailed and technical work in cooperation with the State Board of Social Welfare on promotion of the State eye program. They recommend that the section in the Journal on eye, ear, nose, and throat, be continued, and have planned a survey regarding postgraduate work in this field. They recommend that the delegates from the Kansas Medical Society to the American Medical Association take action against a contemplated resolution pertaining to inadequately trained eye practitioners.

THE COMMITTEE ON STUDY OF HEART DISEASE

This committee offers a file of talks on this subject to county medical societies on request and calls attention to their exhibits at the Wichita and Topeka meetings. They aim to serve as a relay station in the activities of the American Heart Association. They have also made a census of electrocardiac equipment in the state and are continuing studies of the causes of death from heart disease in Kansas. Instead of stimulating lay interest in heart disease for the general public they advocate very strong "sedation" on this subject. Outstanding activity for the year was the five-day postgraduate course held in Emporia in October, 1940. Plans are already under way for a similar meeting in the fall of 1941. They emphasize that all members of the Society are welcome to take part in their activities whether they are members of the Kansas Heart Association or not.

THE COMMITTEE ON HOSPITAL SURVEY

This committee has continued to cooperate with the Kansas Hospital Association in legislative plans, and in a survey of Kansas hospitals and intends to carry out a survey of hospital equipment in the near future. They are also making a study of group hospitalization plans in cooperation with the Kansas Hospital Association.

THE COMMITTEE ON MATERNAL WELFARE

The Committee on Maternal Welfare has had an active year including the organization of the Kansas Obstetric and Gynecology Society, which, they hope will serve to assist in many ways. They have put in the hands of every doctor in the State, a brochure on the minimal standards of obstetrical care and are planning similar studies on the hospital conduct of obstetrical cases. They have also done some work regarding mothers training classes, exhibits at state meetings, and report that through assistance of the Kansas State Board of Health an incubator is now available in each county of the State. As an evidence of their activity in cooperation with the profession and the State Board of Health, they report the lowest maternal mortality in the history of the state—3.4 maternal deaths per thousand live births.

THE COMMITTEE ON MEDICAL ECONOMICS

This committee reports activity throughout the year. They plan to continue the study of the problems of indigent medical care, group hospitalization plans, prepayment plans for medical care and to hold conferences with various farm and labor groups.

THE COMMITTEE ON PHARMACY

This committee has been somewhat inactive and the chairman recommends that it be continued as a temporary committee, rather than given permanent status under the constitution. The major apparent need is for laws regarding pure food and drugs and regulations concerning barbiturates.

THE COMMITTEE ON PUBLIC POLICY

The Committee on Public Policy reports a successful year.

THE COMMITTEE ON SCIENTIFIC WORK

This committee reports assistance to the Shawnee County Medical Society for the state meeting, particularly in the selection of in-state speakers. Various minor activities have included papers for the Journal, the obtaining of a few out-of-state speakers for meetings, exhibits at the state meeting, and some efforts to promote scientific work in the county societies and to improve correlation and planning of postgraduate courses. The bulletins formerly included with the Board of Health News Letter, have been temporarily discontinued. It has been impossible to make any adequate reports on scientific progress to the membership, and the committee would welcome any suggestions as to how this might be furthered since many of our members receive no scientific journals whatever other than the Journal of The Kansas Medical Society. A subcommittee took a small part in seeing that an apparently useless uniform narcotics act was defeated in the last session of the Legislature.

THE COMMITTEE ON MEDICAL SCHOOLS

This committee again emphasizes the crowded conditions at the medical school, particularly in the pre-clinical years at Lawrence, and points out that over 600 applications for admission were received last year. They have helped in securing legislative appropriations for the school and are happy to report that steady improvement has been made in the school in many respects, including adequate library service, limitation of out-patient treatment to truly indigent persons, and a commendable postgraduate educational plan. It feels also that improvement has occurred in the use of the school by Kansas members. A detailed report from Dean Wahl was published in the May issue of the Journal showing that in the past year it was necessary to reject seven fully qualified Kansas applicants for admission to the school. Dean Wahl has also listed therein a number of bequests and donations received by the school.

THE COMMITTEE ON CONTROL OF TUBERCULOSIS

This committee again emphasizes the urgent need for enlargement of sanatorium facilities in the State. Some help has been indicated through action of the Legislature, the University of Kansas School of Medicine and the Kansas Tuberculosis and Health Association for the future, but the problem still remains acute. They commend Dr. C. F. Taylor of the Norton Sanatorium for the continued high standards of work which are maintained at that institution, and also the Tuberculosis Division of the Kansas State Board of Health under the direction of Dr. F. C. Beelman for its constantly increasing activities in the prevention of tuberculosis. Study of the silicosis and tuberculosis problem in Southeastern Kansas continues.

THE COMMITTEE ON LOCATIONS

This committee, organized during the past year, has made some progress in helping to solve a very important problem, made worse during the recent months by the

demands of military preparedness. The committee has attempted to approach the problem from two points of view; namely, that of furnishing locations for men desiring them and also furnishing medical service for communities requesting medical services. Some thirty physicians have been placed in the state in the past year. Various plans are under consideration at present for many definite ways to meet this situation.

THE COMMITTEE ON HISTORY

This committee summarizes the many activities of the past year involving the very successful plans for military preparedness which have brought compliments from Washington and various military authorities. The long legislative session saw approximately sixty bills and resolutions introduced which pertained in some measure to public health and medicine. The defeat of the osteopathic and naturopathic proposals and the passage of an enabling act for group hospitalization were of major interest in that regard. Much work continued along lines of medical economics, public health measures, indigent medical care, etc., but defense activities took precedence over all of these. New committees appointed during the year consisted of a Committee on Medical Preparedness and a Committee on Locations. The Kansas Obstetric and Gynecological Society and the Kansas Heart Association were organized during the year. Another outstanding event was the action of the United States Circuit Court of Appeals in holding that Kansas osteopaths are not permitted to receive federal narcotic permits. They call to attention with regret the loss of one of our outstanding members, a past President of the Society, and its delegate to the American Medical Association, Dr. H. L. Snyder of Winfield.

THE COMMITTEE ON PREPAREDNESS

The Committee on Medical Preparedness, which is the Society's newest, has necessarily had a busy year. Recent activities have continued in an effort to obtain the last small percentage of individual questionnaires of the membership regarding military availability which have not as yet been received, and further action is contemplated in this regard. The committee recommends to the House of Delegates that a committee of three, including the medical examiner, be appointed for each county selective service board in the state. The purpose of such a committee would be to cooperate in efforts to secure exemption or deferment of bona fide medical students, and to assist in similar matters of medical interest. The committee further emphasizes the need for protection of medical service in the communities as defense activities take more and more men from local practice.

THE COMMITTEE ON VENEREAL DISEASE

This committee reports the establishment of two new venereal disease clinics during the year, and emphasizes that these clinics are established only upon application of the local county medical society which organization also is asked to select the local director.

The matter of prenuptial physical examinations which came before the recent session of the Legislature was also considered by the committee.

No reports were received from the Committee on Automobile Accidents and the Stormont Medical Library.

The Committee on Public Health and Education reported

a relatively inactive year with nothing of importance or of a controversial nature encountered.

Respectfully submitted,
 REFERENCE COMMITTEE ON REPORTS
 OF COMMITTEES AND RESOLUTIONS
 Dr. John M. Porter, Concordia,
 Chairman
 Dr. E. L. Vermillion, Salina
 Dr. F. C. Taggart, Topeka
 Dr. Robert Sohlberg, McPherson

The above report of the Reference Committee on Reports of Committees and Resolutions was presented for adoption by sections. All sections and recommendations in the report were approved for adoption.

Upon a motion made by Dr. Porter, and carried, the report of the Reference Committee on Reports of Committees and Resolutions was then adopted as a whole.

Discussion followed concerning violations of the Medical Practice Act in this state.

Upon a motion made by Dr. C. C. Nesselrode of Kansas City, seconded and carried, the Council was empowered to provide additional personnel in the central office.

Lt. Col. S. A. Hammel, Medical Director for Kansas Selective Service, presented information concerning examination of selective service registrants in this state. Dr. Loveland expressed on behalf of the Society its appreciation for the excellent cooperation and assistance the Kansas Selective Service System has furnished the medical profession on this subject.

The Council was requested to consider and to prepare plans for the filling of vacancies occasioned by the use of private physicians in the military forces.

Adjournment followed.

SECOND REGULAR SESSION OF THE HOUSE OF DELEGATES

May 15, 1941—4:00 p.m.

The second regular meeting of the House of Delegates was called to order by Dr. F. L. Loveland, President, at the Municipal Auditorium at Topeka on Thursday, May 15, 1941, at 4:00 p.m.

Dr. Philip W. Morgan, Emporia, Chairman of the Reference Committee on Reports of Officers and Councilors reported that the committee had no additional reports to present.

Dr. John M. Porter, Concordia, Chairman of the Reference Committee on Committee Reports and Resolutions, stated the committee returns to the House of Delegates herewith the resolution presented by the delegates from Marshall County Medical Society with the recommendation that it be referred to the Council for consideration. Upon motion by Dr.

Porter, and carried, the recommendation of the Reference Committee on Committee Reports and Resolutions was adopted.

The next items of business was the annual election of officers and councilors:

Dr. Henry N. Tihen of Wichita was elected President-Elect for 1941-42, and as President for 1942-43; Dr. John L. Latimore of Topeka was elected First Vice-President for 1941-42; Dr. M. Trueheart of Sterling was elected Second Vice-President for 1941-42; Dr. John M. Porter of Concordia was re-elected as Secretary for 1941-42; and Dr. Geo. M. Gray of Kansas City was re-elected Treasurer for 1941-42.

Dr. Philip W. Morgan of Emporia was elected as Councilor of the Fourth District for a term of three years; Dr. John L. Grove of Newton was elected as Councilor of the Fifth District for a term of three years; Dr. J. H. A. Peck of St. Francis was re-elected as Councilor of the Ninth District for a term of three years; and Dr. Herbert Atkins of Pratt was elected as Councilor of the Eleventh District for a term of three years.

Dr. F. L. Loveland of Topeka was elected as delegate to the American Medical Association for 1941, and as delegate-elect for 1942 and 1943.

Upon a motion by Dr. Karl A. Menninger of Topeka, and carried, the expenses of the two delegates, the incoming President, and the executive secretary to the 1941 meeting of the American Medical Association were authorized to be paid by the Society.

Dr. E. L. Vermillion of Salina stated he was authorized to extend an invitation for the Society to hold its 1942 meeting in Salina.

Dr. Howard E. Snyder of Winfield stated that the Cowley County Medical Society would like very much to be host to the meeting in Wichita in 1942, along with any other counties which might like to assist in that regard.

Dr. A. P. Gearhart of Wichita stated the Sedgwick County Medical Society would be glad to serve as host of the meeting or as co-host with surrounding counties if the House of Delegates so desires.

Dr. Herbert Atkins of Pratt offered the services of the Pratt County Medical Society as co-host for the 1942 meeting.

Dr. Howard E. Snyder of Winfield, then made a motion that the 1942 annual session be held in Wichita, and that the Cowley County Medical Society, in conjunction with any other county medical societies which desire to participate, be designated as host for that meeting.

Dr. Henry N. Tihen of Wichita, offered a substitute motion that the 1942 annual session be held in Wichita, that the Sedgwick County Medical So-

ciety accept the services and assistance of the Cowley County Medical Society and any other county societies which desire to assist as co-hosts, and that plans in this connection be referred to the Council for final approval. The substitute motion was adopted.

Discussion followed concerning the proper and most advisable time for holding the last meeting of the House of Delegates at each annual session. Dr. John L. Lattimore of Topeka, stated that this year's arrangement of holding that meeting during the late afternoon of the last day had been attempted as an experiment and that possibly further improvement could be made by arranging to hold the meeting at noon of the last day. Discussion followed, and the consensus was that this year's plan had operated satisfactorily.

Dr. J. F. Hassig of Kansas City, Secretary of the Kansas State Board of Medical Registration and Examination, discussed the work of that board and its appreciation for the assistance of the profession in the handling of its problems and activities.

Dr. C. D. Blake of Hays was then installed as President for 1941-42. Dr. Blake expressed to the Shawnee County Medical Society the appreciation of the Society for a most successful meeting, and its thanks for the efforts of that society in making the meeting a success.

Adjournment followed.

PSEUDOMUCINOUS CYSTADENOMA

(Continued from Page 255)

Laparotomy was performed in April, 1937, and a tumor mass with numerous peritoneal implants found. It was surgically impossible to remove the growths and the patient was given a bad prognosis and sent home. Pathological examination at that time revealed the tumor to be a pseudomucinous cystadenoma which is in itself a benign tumor.

The patient got along fairly well and she came under my care approximately three months after returning home. At this time it seemed necessary to perform an abdominal paracentesis to relieve the distention and accompanying pain. Eight quarts of straw-colored and some gelatinous fluid were obtained. This was repeated one month later and gradually the interval between paracenteses became shorter until the last few months when it became necessary to drain her abdomen about every two weeks. The amount of fluid obtained varied from eight to ten quarts and the character of the fluid changed from fairly liquid to a thick mucinous fluid which had to be aspirated through a tonsil suction handle with the tip removed. During the final year of her life, the patient was drained twenty-two times and altogether thirty-three times and the total amount of fluid obtained was seventy-three gallons.

The patient died on July 5, 1940, and permission for a limited autopsy was granted.

The body was extremely emaciated and abdomen distended. In the incisional scar, there was a growth which was quite cellular and which had been shown to be malignant by a biopsy taken several months before her death. The abdominal cavity was filled with fluid, mucinous in character and all the abdominal viscera matted together by the tumor growth. Numerous apparently complete intestinal obstruction were noted. The liver and diaphragm were displaced upwards. The peritoneum was studded with small growths all of which contained mucinous material. None of the abdominal organs showed any infiltration through the peritoneum and no metastases were found on sectioning. Death was caused by intestinal obstruction.

Pathological examination revealed mucoid carcinoma of the section removed from the incisional scar and pseudomucinous cystadenoma of the ovary with peritoneal implants.

This case illustrates the possibility of a malignancy in a secondary implant even though the primary tumor is microscopically benign. It also illustrates how a perfectly benign tumor, pathologically speaking, may be malignant from a clinical point of view in that it may produce either tremendous pressure from fluid accumulation or interference with vital organs, as in this case, intestinal obstruction.

NEWS NOTES

BILLS IN CONGRESS

Information has been received concerning two bills of unusual interest presently pending in Congress.

One of these is H.R. 4476 which seeks to authorize the employment of interns in the Army, and which was amended by the House of Representatives Committee on Military Affairs to include osteopaths in addition to graduates of recognized medical schools. The other bill is H.R. 4965 which includes appropriations for certain military activities during the fiscal year ending June 30, 1942, and which was amended on the floor of the House of Representatives to authorize the use of osteopaths in the Army.

H.R. 4476 has not as yet been acted upon by the House. H.R. 4965, however, as above indicated, was passed by the House in the amended form and is now pending in the Senate Committee on Appropriations.

MEDICAL PREPAREDNESS

The American Medical Association questionnaires pertaining to physicians who are available and not available for military service was forwarded to the presidents of the county medical societies on June 3. It is planned that the questionnaire replies will be assembled and forwarded to the American Medical Association as a unit by the Society central office during the present month. The questionnaire, as was described in the May issue of the Journal, contains questions concerning the following information: Actual number of physicians now engaged on a full-time basis in Hospitals, Related Institutions, Health Departments and Medical Schools. Actual number of physicians now engaged

on a full-time basis in industry. Actual number of physicians now engaged in Private Practice. Actual number of physicians who are retired or not in practice. Number of physicians who are deemed essential for the medical staffs of hospitals, related Institutions, Health Departments and Medical Schools (if any). Number of physicians who are needed for full-time industrial practice, and for the care of the civilian population.

Ninety-five per cent of the Kansas doctors of medicine have forwarded their individual questionnaires to the American Medical Association. This, therefore, leaves only ninety questionnaires to be obtained in this state. The Society Committee on Medical Preparedness urgently requests that every physician who has not as yet completed his individual questionnaire do so immediately.

A bulletin was also recently forwarded to the county medical societies suggesting that they assist medical students who desire to obtain temporary deferment from military duty pending completion of their medical training. The Kansas Selective Service System has also forwarded information to the county selective service boards that it will be possible to defer medical students on the basis of continuing six months periods for this purpose.

NARCOTIC PERMITS

The attention of members is called to the fact that Federal narcotic permits expire each June 30th. Renewal of permits must be made before July 1, in order to avoid a penalty fee. Renewal in this state should be filed with the office of the Collector of Internal Revenue at Wichita, or at one of the district offices.

A.M.A. MEETING

The Ninety-second Annual Session of the American Medical Association was held in Cleveland, Ohio, on June 2 to 6, 1941.

The total registration at the meeting was 7,269. Kansas members who attended were as follows: Drs. L. G. Allen of Kansas City, W. H. Algie of Kansas City, H. O. Anderson of Wichita, A. L. Ashmore of Wichita, L. F. Barney of Kansas City, C. E. Bates of Leavenworth, C. D. Blake of Hays, M. A. Brawley of Frankfort, H. J. Brown of Winfield, Harlin Crank of Topeka, Foster Dennis of Dodge City, Cora E. Dyck of Moundridge, E. S. Edgerton of Wichita, C. W. Erickson of Pittsburg, W. T. Elnen of Wichita, H. M. Floersch of Kansas City, T. L. Foster of Osawatimie, Arthur Gray of Topeka, J. F. Hassig of Kansas City, O. M. Heiberg of Manhattan, C. A. Hellwig of Wichita, Fred P. Helm of Topeka, H. R. Hodson of Wichita, C. B. Johnson of Eudora, L. E. Johnson of Wichita, Irene A. Koeneke of Halstead, B. W. Lafene of Marysville, J. L. Lattimore of Topeka, Frank Lenski of Iola, F. L. Loveland of Topeka, Ray Meidinger of Highland, S. Murdock of Sabetha, C. C. Nesselrode of Kansas City, L. R. Pyle of Topeka, M. E. Pusitz of Topeka, Ernest Seydell of Wichita, Leo A. Smith of Topeka, Howard E. Snyder of Winfield, C. F. Taylor of Norton, L. M. Tomlinson of Harveyville, Claude C. Tucker of Wichita, Harold H. Woods of Topeka, and James A. Wheeler of Newton.

Dr. Frank H. Lahey of Boston, Massachusetts, was installed as President for the year 1941-42 and Dr. Fred W. Rankin of Lexington, Kentucky, was elected as President-Elect. Other officers elected were as follows: Dr. Herman L. Kretschmer of Chicago as Treasurer, Dr. Olin West of

Chicago as Secretary and General Manager, Dr. Charles W. Roberts of Atlanta, Georgia, and Dr. Ernest E. Irons of Chicago, as members of the Board of Trustees.

The scientific exhibits and the technical exhibits were among the largest in the history of the Association and the scientific sessions were complete in their usual manner.

The foremost actions taken by the House of Delegates were: that the case of the United States Government versus the American Medical Association et al should be appealed to the highest courts in an effort to clarify this important matter; that a Committee on Pan-American relations should be established and that official representatives of the Pan-American countries be invited to attend the 1942 session; that the work of the Committee on Medical Preparedness continue in its efforts to meet the needs of the military and civilian agencies for medical service; that the Council on Medical Education and Hospitals attempt to work out plans wherein the activities of the various specialty certifying boards may more adequately coincide with the needs and best interests of the profession; that consideration be given by the Board of Trustees to the possibility of establishing a section on general practice in the scientific sessions of the American Medical Association; and several resolutions pertaining to the preservation of anesthesiology, radiology, pathology and physical medicine as specialties of medical practice.

Since the American Medical Association selects its place of meeting three years in advance, St. Louis was selected for the 1944 meeting. The 1942 meeting will be held at Atlantic City, and the 1943 meeting at San Francisco.

Activities of interest at the meeting pertaining to Kansas physicians were as follows: Dr. J. L. Lattimore of Topeka was installed as President of the American Society of Clinical Pathology; Dr. L. R. Pyle of Topeka and Dr. C. W. Erickson of Pittsburg, respectively took examinations given by the American Board of Obstetrics and the American Board of Internal Medicine, and were made diplomates of those Boards; Dr. Arthur Gray of Topeka presented a paper on the organization and operation of venereal disease clinics, at a meeting of the Neisserian Society; Dr. Howard E. Snyder of Winfield and Mr. Benjamin Lowther of the Kansas State Board of Health presented an exhibit on cancer control in this state; Dr. H. O. Anderson of Wichita presented a demonstration on fractures at the scientific exhibits section; Dr. Ernest Seydell of Wichita discussed the relationship of tonsillectomies to poliomyelitis before the section on Eye, Ear, Nose and Throat; and Dr. E. S. Egerton of Wichita placed among the leading scorers in the American Medical Association golf tournament.

WOMEN'S FIELD ARMY

The Executive Committee of the Kansas Women's Field Army for Control of Cancer held its annual meeting in Topeka on June 8. The members of the committee in attendance were: Dr. Howard E. Snyder of Winfield, Dr. C. C. Nesselrode of Kansas City, Dr. Lewis G. Allen of Kansas City, Dr. Marion Trueheart of Sterling, Dr. C. D. Blake of Hays, Dr. H. R. Ross of Topeka, Mrs. Donald Muir of Anthony, Miss Georgiana Smurthwaite of Manhattan, and Mrs. Ada Montgomery of Topeka.

Activities of the organization during the past year were reported and plans for the next year were prepared.

Major actions taken were as follows: Appreciation was expressed to the Kansas State Board of Health for its assistance in the Kansas cancer program; that an effort be made to

present speakers on cancer at the state meetings of all lay organizations; that an effort also be made thru the Kansas State Department of Education to have each high school in the state schedule a convocation talk on cancer during the next year; that the radio, newspaper and other publicity campaigns and the program of lay-meetings be continued as in the past; that district training schools and a state training school for Women's Field Army representatives be planned; that pamphlets on cancer continue to be distributed; and that intensive efforts be made to increase the membership of the Women's Field Army.

PRIZES

The following are the winners of prizes at the annual golf and trap shooting tournaments held in connection with the 82nd Annual Session in Topeka on May 12:

GOLF

- Dr. Cecil Snyder, Winfield—Mead Johnson Trophy.
- Dr. G. L. Ashley, Emporia—Merrell & Company Trophy.
- Dr. W. K. Hobart, Topeka—Nordstrum Trophy and Quinton-Duffen Trophy.
- Dr. Paul Trimble, Emporia—H. G. Fisher Trophy.
- Dr. J. L. Lattimore, Topeka—Case of Pet Milk, Pet Milk Company.
- Dr. G. L. Ashley, Emporia—Set of Club Helmets, W. S. Merrell Company.
- Dr. J. V. VanCleve, Wichita—Six golf balls, W. S. Merrell Company.
- Dr. H. P. Jones, Lawrence—Hypodermic Pocket Case, Burroughs Wellcome & Company.
- Dr. E. M. Sutton, Salina—Interval Timer, Lattimore Laboratories.
- Dr. B. I. Krehbiel, Topeka—Sport Glasses, Barnett & Ramel Optical Co.
- Dr. M. B. Miller, Topeka—First Aid Kit, Johnson & Johnson.
- Dr. J. W. Shaw, Wichita—Reno County Golf Bag.
- Dr. L. G. Allen, Kansas City—Twelve golf balls, C. B. Fleet Company.
- Dr. L. S. Nelson, Salina—Cool-Ray Glasses, American Optical Company.
- Dr. E. G. Padfield, Salina—Diagnostic Set, A. S. Aloe Company.
- Dr. Cecil Snyder, Winfield—Twelve golf balls, Borden & Company.
- Dr. W. K. Hobart, Topeka—Twelve golf balls, Gerber Products Company.
- Dr. C. M. Fitzpatrick, Salina—Three golf balls, Shawnee County Medical Society.
- Dr. H. A. West, Yates Center—Three golf balls, Shawnee County Medical Society.
- Dr. C. F. Taylor, Norton—Physicians Kit, Upjohn Company.
- Dr. H. T. Jones, Lawrence—"International Medicine" by Musser, Lea & Febiger Company.
- Dr. R. P. Knight, Topeka—Mennens Toilet Set, Mennen Company.
- Dr. George Gsell, Wichita—Zipper Ophthalmic ointment case, Abbott Laboratories.
- Dr. E. H. Decker, Topeka—Dietene, Dietene Company.
- Dr. E. F. DeVilbiss, Kansas City—Gem Safety Razor, A. S. R. Corporation.
- Dr. George Gsell, Wichita—Prize.
- Dr. H. E. Neptune, Salina—Safety Razor, A. S. R. Corporation.

Dr. A. P. Cloyes, El Dorado—Surgeons Laboratory Apron, Holland-Rantos Company.

SKEET

- Dr. R. E. Cheney, Salina—Mead Johnson Trophy.
- Dr. R. E. Cheney, Salina—Electric Clock, W. E. Isle Company.
- Dr. F. L. Loveland, Topeka—Biolite Intra-Red Lamp, McIntosh Electrical Corp.
- Dr. Murray Eddy, Hays—One dozen Becton Dickson Hypo Syringes, Goetze Niemer Company.
- Dr. H. T. Jones, Lawrence—Trophy, Saline County.
- Dr. H. J. Davis, Topeka—Jacket, Pratt County Medical Society.
- Dr. G. C. Bates, Independence—Shooting Jacket, Pratt County Medical Society.
- Dr. E. L. Vermillion, Salina—Willsonite Sport Goggles, Barnett & Ramel Optical Company.
- Dr. R. C. Jeffries, Atchison—Two packages of Kit Suture Assortments, Davis & Geck Company.
- Dr. W. E. Stone, Norton—Two packages of Kit Suture Assortments, Davis & Geck Company.
- Dr. G. C. Bates, Independence—Trophy, Saline County Medical Society.
- Dr. Edward Smiley, Junction City—Cool-Ray Sunglasses, American Optical Company.
- Dr. Howard E. Snyder, Winfield—Agfa Ansco Camera, Agfa Ansco Camera Company.
- Dr. C. D. Bell, Pittsburg—Pyrex Sterilizing Container, Parker, White & Heyl, Inc. (Bard-Parker).
- Dr. H. E. Haskins, Kingman—Jacket, Pratt County Medical Society.
- Dr. W. H. Weidling, Topeka—Jacket, Pratt County Medical Society.
- Dr. C. D. Blake, Hays—Men's Fitted Leather Case, Luzier's, Inc.
- Dr. George Seitz, Salina—Men's Fitted Case, E. R. Squibb & Son.
- Dr. C. V. Minnick, Wakefield—Gem Safety Razor, A. S. R. Corporation.
- Dr. C. F. Taylor, Norton—Carton of Phillip Morris, Phillip Morris Co.

The following officers of the Kansas Medical Golf and Trapshooting Association were elected to serve for the coming year: Dr. Grover G. Whitley of Douglas as President; Dr. G. L. Ashley of Emporia as Vice-President, and Dr. Paul Trimble of Emporia as Secretary.

Prizes were given by several county medical societies. Pratt County Medical Society and Saline County Medical Society each gave money with which to purchase additional prizes.

SECRETARIES CONFERENCE

The Secretaries Conference which was held in Topeka on May 14 in connection with the annual session was attended by the following members: Drs. L. L. Wenke of Great Bend, M. W. Woodhull of Cottonwood Falls, W. H. Iliff of Baxter Springs, Cleo D. Bell of Pittsburg, Daniel Peterson of Herington, D. R. Davis of Dodge City, M. E. Kaiser of Ottawa, L. S. Steadman of Junction City, C. W. Inge of Formoso, H. E. Haskins of Kingman, H. J. Stacey of Leavenworth, A. M. Lorentz of McPherson, Thomas T. Meyers of Marysville, W. L. Speer of Osawatomie, C. C. Kerr of Council Grove, Virgil E. Brown of Sabetha, Athol Cochran of Pratt, F. C. Taggart of Topeka, R. W. Van Deventer of Wellington, F. H. Rhodes of Hanover, E. C. Duncan of Fredonia, C. A. Boyd of Hutchinson, O. A.

Hennerich of Hays, J. B. Ungles of Satanta, G. R. Hastings of Lakin, C. D. Vermillion of Tescott, O. W. Davidson of Kansas City, John M. Porter of Concordia, and Seth A. Hammel of Topeka. Mr. Jack Austin of Wichita and Mr. Clarence G. Munns of Topeka were also present.

The program at the meeting consisted of a presentation by Dr. Hammel, medical director of the Kansas Selective Service System, concerning the physical examination aspects of selective service and a discussion by Dr. Duncan on legislative matters. Dr. Porter also led a discussion relating to the adequacy of medical facilities in this state. Decision was made that another secretaries conference should be held at some accessible point during the next winter.

BLIND PROGRAM

The following report was made by Dr. John A. Billingsley, State Ophthalmologist for the Kansas State Board of Social Welfare, on May 31, 1941:

PROGRESS REPORT

May 31, 1941

Number of the last eye report received.....	3,899
Number of eye examinations approved for Aid to the Blind.....	2,305
Number of eye examinations not eligible for Aid to the Blind.....	1,588
Numbers on the register not issued to cases between numbers 1 and 3,899.....	5
Number of cases not accepted and numbers were issued to reports.....	1
Number of re-examinations made and fee allowed	342

RESTORATION OF SIGHT PROGRAM

Total number of cases approved for treatment..	1,915
Number who have not received treatment for various reasons	408
Number known to be deceased.....	19
Number known not to be eligible on the basis of need.....	11
Number who have refused treatment or have not been treated because of age, physical condition, etc... 115	
Number not treated for unknown cause	263
Number still eligible for Aid to the Blind after treatment	174
(Of these 5 are known to be deceased.)	
Number not eligible for Aid to the Blind, who have been treated, but are not under treatment at this time. (Twelve of these are known to be deceased.).....	284
Number now under treatment.....	149
Total amount authorized for cases now under treatment	\$12,471.85
Number of authorized treatments completed, May, 1941	21
Cases not eligible for Aid to Blind	7
Cases still eligible after treatment	14
Total amount paid on 21 cases completed this month	\$1,310.47
Doctors' fees	52.1569%
Hospital fees	37.2003%
Optical companies' fees	6.3336%
Drugs	4.3092%

Total amount paid for treatments since initiation of program.....	\$52,246.15
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PREVENTION OF BLINDNESS PROGRAM

Total number of cases approved for treatment..	507
Number who have not received treatment for various reasons	124
Number known to be deceased.....	2
Number known to be not eligible on basis of need.....	9
Number known to have refused treatment	5
Number now approved for Restoration of Sight Program.....	6
Number not treated for unknown causes	102
Number of completed treatment cases (six of these are now eligible).....	290
Number of cases now under treatment.....	93
Total amount authorized for cases now under treatment	\$ 3,448.50
Number of authorized treatments completed during May, 1941	13
Amount paid on 13 completed cases this month	\$434.50
Doctors' fees	70.5409%
Hospital fees	15.4200%
Optical companies' fees	2.3015%
Drugs	11.7376%
Total amount paid for treatments since initiation of program	\$14,510.49

HEART DISEASE

The following bulletin pertaining to the diagnosis of heart disease was forwarded by the Kansas State Board of Health to each doctor of medicine in the state on May 29:

Heart disease is the leading cause of death in the state of Kansas. Considerable effort is being made to determine the exact factors responsible for the high morbidity and high mortality of the various types of heart disease. Surveys of the diagnoses of large groups of ambulatory heart patients and those dying of heart disease are being made. At present, this work is seriously handicapped by a lack of sufficient diagnostic data.

It is urged that for more practical purposes all physicians encountering heart disease use the outline given in "Nomenclature and Criteria for Diagnosis of Diseases of the Heart" which has been adapted and distributed by the American Heart Association. The book is inexpensive and should be owned and carefully studied by every physician. Besides giving the diagnostic criteria to be obtained in physical examination, there are excellent sections on radiological diagnosis, interpretations of electrocardiograms and pathological diagnosis of autopsied specimens. The terminology is that used by the vast majority of cardiologists in this country.

A complete diagnosis of a case of heart disease should, if possible, consist of a least one heading from each of the following groups: (1) Etiological Diagnosis, (2) Anatomical Diagnosis and (3) Physiological Diagnosis. During the life of the patient the physiological diagnosis should be carefully subdivided into Disturbances of Cardiac Mechanism and Functional Capacity and into the Therapeutic Classification.

(1) **ETIOLOGICAL DIAGNOSIS**—State whether primary cause is rheumatic fever*, syphilis*, arteriosclerosis, hypertension, hyperthyroidism*, congenital anomaly, bacterial infection*, pulmonary disease or other rarer causes such as anemia, hypothyroidism, neoplasm, thoracic deformity, trauma or psycho-neurosis. (*When one of these diagnoses is used state if possible whether the etiological factor is active or inactive.)

(2) **ANATOMIC DIAGNOSIS**—Under the following headings the more common findings are listed.

Disease of the Aorta and Pulmonary Arteries: Aneurysm (specify location), aortitis, arteriosclerosis of aorta or pulmonary arteries, embolism, thrombosis, spontaneous rupture or injury.

Coronary Arteries: Arteriosclerosis, arteritis, embolus, thrombosis, periarthritis nodosa, et cetera.

Myocardium: Active myocarditis, fibrosis, infarct (recent or healed) fatty infiltration, aneurysm, enlargement of chambers, et cetera.

Endocardium: Valvular deformity with insufficiency or stenosis, bacterial endocarditis, valvular sclerosis, et cetera.

Pericardium: Acute pericarditis (fibrinous, serofibrinous, or purulent), chronic pericarditis (adhesive without constriction, constrictive, serous), calcification of pericardium, injury, et cetera.

(3) **PHYSIOLOGICAL DIAGNOSIS**

Cardiac Mechanism: The most common of these are disturbances of rhythm and conduction such as auricular fibrillation, auricular flutter, paroxysmal tachycardia, auriculoventricular block and bundle branch block. From a therapeutic and prognostic vantage many of these should be further intimately classified.

Clinical Syndromes: Adams-Stokes syndrome, anginal syndrome, carotid sinus syndrome, paroxysmal dyspnea, et cetera.

Functional Capacity:

Class I: Ordinary physical activity causes no discomfort.

Class II: Ordinary physical activity causes discomfort.

Class III: Less than ordinary physical activity causes discomfort.

Class IV: Any physical activity causes discomfort.

Therapeutic Classification:

Class A: Ordinary physical activity needs no restriction.

Class B: Ordinary physical activity needs no restriction but should be advised against severe or competitive efforts.

Class C: Ordinary physical activities should be restricted.

Class D: Ordinary physical activities should be markedly restricted.

Class E: Should be at complete rest or confined to bed.

The information included therein was prepared by the Society Committee on Heart Disease and the Kansas Heart Association. It is the belief of those organizations that standardization of diagnosis and reporting of heart disease will make it possible for more adequate studies to be made concerning ways and means for controlling morbidity and mortality on this subject.

GROUP HOSPITALIZATION

The following is the group hospitalization enabling act sponsored by the Kansas Hospital Association and passed by the Legislature in its recent session:

Section 1. This act shall be known as the mutual nonprofit hospital service corporation act.

Sec. 2. Mutual nonprofit corporations may be organized for the purpose of entering into contracts with participating hospitals to provide hospital service for their subscribers. The affairs of any such nonprofit hospital service corporations organized under this act shall be managed by a board of directors of not less than fifteen members composed of:

(1) Administrators or trustees of participating hospitals;

(2) Licensed physicians exclusive of group (1), and

(3) Members of the public exclusive of groups (1) and (2), in equal proportion. The directors shall take oath of office as in other corporations and duplicates of such subscribed oaths shall be forwarded at the time of election to the commissioner of insurance for filing in his office. The by-laws shall specify the number of directors necessary to constitute a quorum, which shall not be less than ten members.

Sec. 3. Corporations organized under the provisions of this act are empowered and authorized to enter into contracts to provide hospital service for its subscribers with such hospitals, including municipal, county, proprietary and charitable hospitals, as may be approved by the State Board of Health or its successors in office. The governing bodies of municipal or county hospitals are hereby authorized and empowered to contract with mutual nonprofit corporations organized under this act to provide hospital service for the subscribers of said corporation. Such contracts shall constitute direct obligations of the participating hospitals to the subscribers: *Provided*, That nothing in any contract to be made by any such corporations with a participating hospital or subscriber shall have the effect of imposing upon any participating hospital any obligation or liability for any act, omission or default of any other participating hospital or of such corporation.

Sec. 4. The commissioner of insurance shall issue a certificate of authority to such corporation upon compliance with the following conditions: (A) It shall file with the commissioner of insurance a certified copy of its charter, by-laws, and the policy forms and rates it proposes to use. (B) It shall file with the commissioner of insurance contracts with at least twenty participating hospitals having a total of not less than three hundred beds to provide hospital service to the subscribers as required by section 3 of this act. (C) It shall hold bona fide applications for hospital service upon which it shall have collected a minimum of two months' premiums from at least two hundred subscribers, upon which it shall issue policies simultaneously. The total of such premiums shall be held in cash and shall not be disbursed until the policies are in force. Any such corporation shall be in possession of lawful assets over and above all liability in an amount not less than three thousand dollars and shall file with the commissioner of insurance a financial statement certified to by at least two executive officers. Before issuing a certificate of authority the commissioner shall cause an examination to be made of the

affairs of the corporation as provided by section 40-208 of the General Statutes of 1935.

Sec. 5. Every policy made by a corporation subject to the provisions of this act shall be for a period not to exceed twelve months, and no policy shall be made providing for the inception of benefits at a date later than one year from the date of the policy.

B. No policy except as provided in subsection E of this section, between any such corporation and a subscriber, shall entitle more than one person to benefits, except that a "family policy" may be issued, at an established rate, granting hospital benefits to a husband and wife, or husband, wife and their child or children not over eighteen years of age, who must be named in the policy.

C. Every policy entered into by any such corporation with any subscriber thereto shall be in writing and a certificate stating the terms and conditions thereof shall be furnished to the subscriber to be kept by him. No such certificate form shall be made, issued or delivered in this state unless it contains the following provisions: (a) A reference to the amount payable to the corporation by the subscriber and the times at which and manner in which such amount is to be paid; (b) a statement of the nature of the benefits to be furnished and the period during which they will be furnished; and if there are any benefits to be excepted, a detailed statement of such exceptions printed as hereinafter specified; (c) a statement of the terms and conditions, if any, upon which the policy may be canceled or otherwise terminated at the option of either party; (d) a statement that the policy includes the endorsements thereon and attached papers, if any, and contains the entire contract; (e) a statement that no statement by the subscriber in his application for a policy shall avoid the policy or be used in any legal proceeding thereunder, unless such application or an exact copy thereof is included in or attached to such policy, and that no agent or representative of such corporation, other than an officer or officers designated therein, is authorized to change the policy or waive any of its provisions; (f) a statement that if the subscriber defaults in making any payment under the policy, the subsequent acceptance of a payment by the corporation or by one of its duly authorized agents shall reinstate the policy, but with respect to sickness and injury, only to cover such sickness as may be first manifested more than ten days after the date of such acceptance; (g) a statement of the period of grace which will be allowed the subscriber for making any payment due under the policy. Such period shall be not less than ten days; (h) a statement that the subscriber may choose any hospital for hospitalization.

D. In every such policy made, issued or delivered in this state: (a) All printed portions shall be plainly printed; (b) there shall be a brief description of the policy on its first page and on its filing back; (c) the exceptions of the policy shall appear with the same prominence as the benefits to which they apply; and (d) if the policy contains any provision purporting to make any portion of the articles of incorporation or by-laws of the corporation a part of the policy, such portion shall be set forth in full.

E. A hospital service corporation may issue a group policy, provided the group of persons thereby insured conforms to the requirements of section 40-1109 (k) of the General Statutes of 1935, and provided such policy and the individual certificates issued to mem-

bers of the group shall comply in substance with this section. Any such policy may provide for the adjustment of the rate of premium based upon the experience thereunder at the end of the first year or of any subsequent year of insurance thereunder and such readjustment may be made retroactive only for such policy year.

Sec. 6. The rates charged by any such corporation shall be filed with the insurance department. Premiums shall be payable in cash and no policy issued by such corporation shall provide for any assessment or contingent premium.

Sec. 7. Such corporation shall maintain unearned premium and other reserves upon the same basis as that required of domestic stock insurance companies transacting the same kind of insurance.

Sec. 8. Any director, officer or member of any such corporation, or any other person, may advance to such corporation any sum or sums of money necessary for the purposes of its business or to enable it to comply with any of the requirements of the laws of this state, and such moneys and such interest thereon as may have been agreed upon, not exceeding eight percentum per annum, shall be payable only out of the surplus remaining after providing for all reserves and other liabilities, and shall not otherwise be a liability or claim against the corporation or any of its assets. No commission or promotion expenses shall be paid in connection with the advance of any such money to the corporation, and the amount of such advance shall be reported in each annual statement.

Sec. 9. Such corporations shall be subject to the provisions of this act and to sections 40-214, 40-215, 40-216, 40-218, 40-219, 40-222, 40-223, 40-224, 40-225, 40-226, 40-228, 40-229, 40-230, 40-231, 40-235, 40-236, 40-237, 40-247, 40-248, 40-249, 40-250, 40-251 and 40-254 of the General Statutes of 1935 and section 40-227 of the General Statutes Supplement of 1939, except as the context otherwise requires, and shall not be subject to any other provisions of the insurance code except as expressly provided in this act.

Sec. 10. Every corporation organized under the provisions of this act is hereby declared to be a charitable and benevolent corporation.

Sec. 11. (a) No corporation subject to the provision of this act shall during any one year disburse more than ten per cent of the aggregate amount of the payments received from subscribers during that year as expenditures for the soliciting of subscribers, except that during the first year after the issuance of a permit, such corporation may so disburse not more than twenty percentum of such amount and during the second year not more than fifteen percentum. (b) No such corporation shall, during any one year, disburse a sum greater than fifteen percentum of the payments received from subscribers during that year as administrative expenses, except that during the first two years after the issuance of the permit, such corporation may disburse not more than twenty percentum of the payments received from subscribers. The term, "administrative expenses" as used in this section, shall include all expenditures for nonprofessional services and in general, all expenses not directly connected with the furnishing of the benefits specified in this act, but not including expenses referred to in subsection (a) hereof.

Sec. 12. Any such corporation shall pay the commissioner of insurance as a fee for the examination of

the charter and other documents and the issuance of a certificate of authority the sum of ten dollars. The annual fee for the filing of the annual statement and the renewal for the certificate of authority shall be ten dollars.

Sec. 13. No provisions of this act or of any policy for hospital service, between a corporation subject to the provisions of this act and a subscriber shall in any way affect the operation of article 5, chapter 44, of the General Statutes of 1935 and amendments thereto constituting the workmen's compensation law.

Sec. 14. This act shall take effect and be in force from and after its publication in the statute book.

The officers of the Kansas Hospital Association are presently making plans for the institution of a state-wide program under this act.

PHYSICIANS FOR BRITAIN

The American Red Cross recently announced that it would sponsor an achievement campaign wherein 1,000 American physicians will be obtained to furnish assistance to Great Britain.

The physicians enlisting for this service will be assigned to either the Royal Army Medical Corps or the civilian Emergency Medical Service. The requirement for acceptance are as follows:

"Applicants must be citizens of the United States, unmarried or without dependents, and no more than forty years of age for service with the RAMC, nor more than forty-five years old for appointment to the EMC. Professional qualifications of all applicants will be reviewed by a subcommittee named by the Division of Medical Sciences of the National Research Council, working in collaboration with the American Medical Association. Applicants must be graduates of Class A medical schools in Canada or the United States and must have had at least one year of clinical hospital training in an institution approved by the American College of Surgeons. For the EMC candidates must have been in practice at least five years and not more than ten years. All applicants will be required to pass a stringent physical examination.

Doctors accepted for service with the RAMC will be commissioned as lieutenants with remuneration at approximately \$1456.50 annually. At the end of twelve months of satisfactory service they will be promoted to the rank of captain with annual pay of approximately \$1800. At the end of each year of satisfactory service lieutenants will receive a bonus of \$100, equivalent to approximately \$402.50, and captains \$150 or \$603.75. Promotions beyond the rank of captain will be upon general merit. Accepted candidates will not lose their citizenship except in cases of dual nationality under which the individual might be classed as a British subject. Under the Geneva Convention, signed not only by the belligerents but by the United States as well, signatories have undertaken to respect and protect all medical personnel. This Convention states in part:

"Personnel charged exclusively with . . . the treatment of the wounded and sick . . . shall be respected and protected under all circumstances. If they fall into the hands of the enemy, they shall not be treated as prisoners of war".

The minimum tenure of service with the RAMC is one year, the contract to be renewable each successive year. Volunteers for the duration of the war also will be accepted. Free transportation will be provided from the home

to point of duty and, upon termination of service, to a selected place of residence in the United States. American officers will be eligible for the same disability compensation as others in event of disability or death.

Volunteers accepted by the RAMC are liable for service wherever British troops are located, mainly in Europe, Africa and Asia. Assignment to any particular place cannot be guaranteed, though wishes of applicants will be considered. They may be required to serve as medical officers in charge of native troops and, if serving in India, may be required to serve under Indian medical officers.

In addition to regimental medical units, assignments will be to field ambulance units, motor ambulance convoys, casualty clearing stations, ambulance trains, general hospitals, convalescent depots, hospital ships, and units serving with stationary troops, such as anti-aircraft formations and the like.

Comparatively few of the volunteers will be assigned by the British Red Cross to the Emergency Medical Service. Those receiving such appointment must sign a contract for full-time employment for one year in the first instance at any hospital, public or private, the Ministry of Health may designate. Duties will include hospital treatment of Service and civilian air raid casualties, other Service casualties, and sick, and a number of special categories of civilian sick for the treatment of which the Government has undertaken financial responsibility for duration of the war. Rates of pay are the same as for British subjects, £550 a year, or approximately \$2213.75, with full board and lodging, or an allowance of £100 where board and lodging are not provided. In case of injury or death in the course of their employment or as a result of enemy action, compensation is the same as that provided for British subjects under the Personal Injuries Scheme for civilians."

COUNTY SOCIETIES

The Butler-Greenwood County Medical Society held a meeting on April 11 at El Dorado. Drs. Ray Balyeat and Hazel Balyeat of Oklahoma City, Oklahoma, spoke on "Allergy of the Respiratory Tract" and "Allergic Dermatitis."

The Chase County Medical Society sponsored a crippled childrens clinic in conjunction with the Kansas Crippled Children's Commission at Cottonwood Falls on April 3. Dr. A. E. Bence of Wichita assisted in the clinic.

The Franklin County Medical Society held a meeting on April 30 in Ottawa. Indigent medical care plans for the county were discussed and Dr. Thomas L. Foster of Osawatomie spoke on "The State Hospital and the General Practitioner." At a meeting of that society held in March, Dr. Ray M. Balyeat of Oklahoma City, Oklahoma, was the guest speaker.

The Linn County Medical Society met in Mound City on May 2.

The Lyon County Medical Society held a meeting in Emporia on April 1. Dr. M. L. Perry of Topeka spoke on "High Lights on Diagnosis of Psychosis." A movie on "Studies of Human Fertility" was also shown.

The Pottawatomie County Medical Society held a dinner meeting at Onaga on May 6. Dr. A. H. Bressler of Wamego and Dr. T. C. Hinkle of Onaga were elected as honorary members of the society.

The Saline County Medical Society held a dinner meeting in Salina on April 24 honoring Dr. E. R. Cheney of Gypsum, who has practiced medicine for fifty years.

The Sedgwick County Medical Society elected officers for the coming year at a meeting of that organization held in Wichita on May 20. Dr. Charles Rombold was elected as the President to succeed Dr. A. P. Gearhart, Dr. E. E. Tipton as Vice-President, Dr. Harold O'Donnell as Secretary and Dr. Earl Mills was re-elected as Treasurer. Dr. A. P. Gearhart, Dr. C. A. Hellwig and Dr. Bruce Meeker were elected as members of the Board of Directors and Dr. George Corrigan as a member of the Board of Censors.

The Sumner County Medical Society met in Wellington on May 22. Dr. J. V. VanCleve of Wichita presented a discussion of "Common Skin Diseases." At another meeting of that society held on April 17, Dr. Henry Tihen of Wichita spoke on "Newer Concepts of Gastro-Intestinal Diseases."

The Washington County Medical Society held a dinner meeting in Washington on May 6.

The Wyandotte County Medical Society held a joint dinner meeting with the pharmacists of Wyandotte County, in Kansas City, on April 15. Dr. N. E. Melencamp of Dodge City spoke on "The Doctor and the Pharmacists" and Mr. Al F. Williams of Topeka spoke on "The Pharmacist and the Doctor." At a meeting on May 20, Mr. C. G. Munns of Topeka was the guest speaker.

MEMBERS

Dr. Donald F. Coburn of Kansas City and Dr. Charles K. Shofstall of Kansas City, Missouri, were the authors of an article on "Glossopharyngeal Neuralgia" which was published in the April issue of the Archives of Otolaryngology.

Dr. L. G. Glenn formerly of Protection has moved to Council Grove where he will be associated with Dr. T. P. Haslam. Dr. J. L. Ptacek, who was formerly associated with Dr. Haslam, has moved to Webster City, Iowa.

Dr. C. Alexander Hellwig of Wichita is the author of an article on "Rapid Tissue Diagnosis; Comparison of Microscopic Diagnosis Obtained from Terry's Razor Sections and from Paraffine Sections in 4,326 Biopsies" which was published in the April issue of Archives of Surgery.

Dr. T. T. Holt of Wichita was elected Vice-President of the American College of Physicians at a recent meeting of that organization.

An abstract of the article, "Therapy in Pneumonia" by Dr. R. H. Majors of Kansas City published in the December issue of the Journal, was printed in the February issue of Southern Medicine and Surgery.

An abstract of the article on "Cleidocranial Dystosis" by Dr. Paul W. Miles of Kansas City, which was published in the November, 1940, issue of the Journal was published in the February issue of the International Medical Digest.

Dr. J. N. Sherman of Chanute and Dr. John Mitchell of Salina have recently been named as county health officers for Neosho and Saline Counties respectively.

Dr. M. R. Stapp formerly of Moundridge has recently located at Hesston.

An abstract of the article on "Vaginal Diphtheria" by Dr. Samuel L. Stout of Wichita which was published in the February issue of the Journal was printed in the March issue of *Terrapeutica Al Dia*, of Havana, Cuba.

Dr. Otis H. True formerly of Bird City has recently moved his office to Hays.

DEATH NOTICES

Dr. James Edward Burrow, 73 years of age, died on April 4 at Fort Dodge. Dr. Burrow was born in Hickman, Kentucky, on March 31, 1886, and was graduated from the Hospital Medical College of Louisville, Kentucky, in 1898. He was a member of the Chautauqua County Medical Society.

Dr. Paris Follett, 75 years of age, died on March 9, of carcinoma of the lung, at his home in Chanute. Dr. Follett was born in 1865, was graduated from the Chicago Homeopathic Medical College in 1896 and was a member of the Neosho County Medical Society.

Dr. Fred G. Poutre of Horton, 53 years of age, died on May 9. Dr. Poutre was born on January 5, 1888 at Greenleaf. He was graduated from the University of Kansas School of Medicine in 1910, and was a member of the Brown County Medical Society.

Dr. Herbert L. Scales, 71 years of age, died on March 28 of cerebral hemorrhage, at his home in Hutchinson. Dr. Scales was born in 1870, and was graduated from the Louisville Medical College, Louisville, Kentucky, in 1892. He was a member of the Reno County Medical Society.

Dr. Frank Elbert Tolle, 33 years of age, died on May 3 in Overland Park. Dr. Tolle was graduated from the University of Kansas School of Medicine in 1932. He was a member of the Johnson County Medical Society.

BOOK NOOK

NEW BOOKS RECEIVED

THE NEW INTERNATIONAL CLINICS—Volume 1, New Series Four, 1941. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa. Published by the J. B. Lippincott Company, Philadelphia, Montreal, and New York. Contains 304 pages illustrated.

HEMORRHAGIC DISEASES, Photo-Electric Study of Blood Coagulability—Kaare K. Nygaard, M.D., Former Fellow in Surgery, the Mayo Foundation; Former Assistant Surgeon, the University Clinic, Oslo; Fellow of the Alexander Malthe Foundation for Research in Medicine, Surgery and Gynecology. Published by the C. V. Mosby Company, St. Louis, Missouri, 1941. Priced at \$5.50. Contains 320 pages illustrated.

THE 1940 YEAR BOOK OF GENERAL MEDICINE—Edited by George F. Dick, M.D., John Berns Amberson, Jr., M.D., George R. Minot, M.D., S.D., F.R.C.P., (Edinburgh and London), William B. Castle, M.D., A.M., M.D. (Hon) Utrecht, William D. Stroud, M.D., and

George B. Eusterman, M.D. Published by the Year Book Publishers, Inc. 1940. Priced at \$3.00. Containing 934 pages, illustrated. Departments are as follows: Infectious Diseases; Diseases of the Chest; Diseases of the Blood-Forming Organs, Diseases of the Kidney; Diseases of the Heart and Blood Vessels and Diseases of the Digestive System and of Metabolism.

DIRECTORY OF MEDICAL SPECIALISTS, Certified by the American Boards, 1939—Paul Titus, M.D., Directing Editor. Published for the Advisory Board for Medical Specialties, by the Columbian University Press, New York, 1940. Price \$5.00.

BOOK REVIEWS

SOCIOLOGY AND SOCIAL PROBLEMS, A Textbook for Nurses—Deborah MacLurg Jensen, R.N., B.Sc., the C. V. Mosby Company, St. Louis, Missouri. 1939. Price \$2.75. The study of social problems and sociology has very recently been added to the curriculum of nursing schools. The author believes that the nurse, in order to adjust well to her patient and her environment, should know something of the social factors that modify personality.

She is well aware that student nurses have neither the time nor the energy to study comprehensively a subject so inclusive. She hopes, however, through this book to give them a better understanding of human relations.

Chapters I to III discuss man's original nature and his personality development. She discusses briefly maladjust-

ments, personality disorganization and group psychology. She points out that a patient's attitude toward a disease may be affected by society's attitude toward it.

I would recommend that "Sociology and Social Problems" be placed on the list of required reading for nurses. It will not only help them to a better understanding of their patients but also to a better understanding of themselves.

—E.S.

SHOCK, Blood Studies as a Guide to Therapy—John Scudder, M.D., With a Forward by Allen O. Whipple, M.D. First Edition. With 55 Illustrations, Five Plates, Three of Which are in Color. J. B. Lippincott Company, Philadelphia, 1940. Price \$5.50.

In the first part of his book Dr. Scudder presents a historical resume of the literature on shock since its conception two centuries ago. Vasoconstriction and capillary congestion were noted early and toxemia, loss of circulating fluid, neurogenic disturbances and adrenal exhaustion were each proposed by some authors to be the fundamental disorder involved. Previous work on blood changes in shock is reviewed, special attention being given to the rise in plasma potassium as an indication of profound cell injury. (It is noted that a similar rise occurs in stored blood and may render its use dangerous in shock.)

Hemoconcentration occurs in advance of falling blood pressure and its early detection may permit therapy before the changes become irreversible. To this end it is important to know the specific gravity of peripheral blood, cell volume percent, plasma solids, and plasma proteins in venous

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OBSTETRICS—Three Weeks Personal Course starting August 4th. Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 8th. Informal Course every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.

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blood, since various degrees of anemia render blood count and hemoglobin unreliable.

Part two provides a series of fifty-four case studies of shock in human patients, and emphasis is laid upon the following observations:

1—In shock there is a generalized vaso-constriction, leading to diminished volume flow, trapping of blood in the periphery, a decrease in cardiac return, fluid loss and hemocentration.

2—Determination of the specific gravity of peripheral blood by the falling drop method is more accurate than cell count, and gives evidence of the foregoing sequence many hours before the blood pressure falls, thus permitting corrective therapy before an irreversible state is reached.

3—Replacement of electrolyte loss (especially Na Cl) is essential, but if overdone may result in dangerous dehydration of tissue cells.

4—Disturbance of potassium metabolism occurs in shock (values 100 percent above, or twenty-five percent below, the normal of 16.7 mgm. percent for plasma were all fatal).

5—Potassium disturbance is a measure of profound cellular damage. Normal cell potassium is 392 mgm. percent—over twenty-three times that of plasma, and a rise in plasma potassium occurred in all forms of shock except sepsis where fatalities occurred with a fall of twenty-five percent.

6—Potassium poisoning effects the nervous and muscular systems, especially cardiac muscle.

7—Therapy is dependent upon an accurate knowledge of the level of blood electrolytes (especially Na Cl and potassium) and the cellular, protein, and fluid balance.

8—Heat, fluids, Na Cl, oxygen, and analgesics contribute to relieving vasoconstriction and are of great importance.

9—Transfusion of plasma or blood as indicated is essential to the restoration of blood balance.

10—Administration of the adrenal cortex hormone increases potassium excretion and causes retention of water and Na Cl. This is desirable in most cases of shock (high plasma potassium)—undesirable in cases where plasma potassium is low, as in some forms of sepsis.

11—Dr. Scudder's "new treatment of shock" includes:

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b. Eschatin (Cortical extract) i.v., twenty cc.

These are repeated as indicated by the response of pulse and blood pressure.

A laboratory manual for the newer procedures employed is found inside of the back cover.

The book is in semi-outline form and the author does not "think through" his problems with his reader who is apt to get the impression that he is looking over the shoulder of a research scholar at a notebook of historical and laboratory information, still in fragmentary form, which needs further interpretation by Dr. Scudder before its potential contribution to the subject of shock can be fully realized.

—T.P.B.



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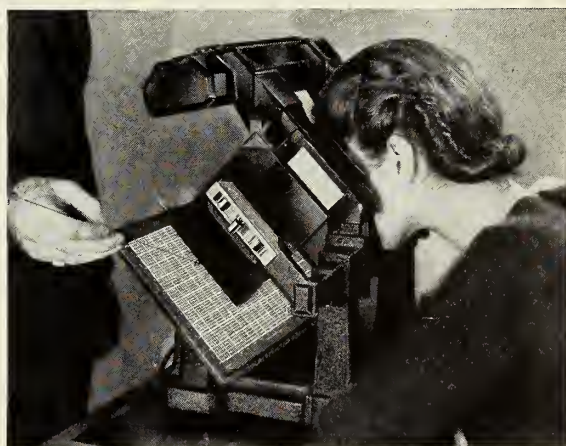
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TABER'S CYCLOPEDIA MEDICAL DICTIONARY—Including a Digest of Medical Subjects—Medicine, Surgery, Nursing, Dietetics and Physical Therapy—by Clarence Wilbur Taber, and Associates. Published by the F. A. Davis Company of Philadelphia, 1940. Priced at \$3.00. The only medical dictionary, large or small (not compiled) written by a corps of medical specialists. This work is as much a dictionary of medical subjects as it is a comprehensive medical lexicon. It contains 50,000 words, including the latest terms and drugs, and will answer all of the requirements of professional groups concerned with any branch of medicine. New features not found in other abridged dictionaries are worthy of commendation; easily understandable pronunciation of words with their derivations; medical synonyms; toxicology which includes all important poisons with their symptoms and first aid treatment; nursing procedures; a full list of psychiatric terms; an epitome of diagnosis including symptoms and signs, auscultation, percussion, palpation, and other examinations; a fact finding index; a double thumb index and an appendix which is printed on colored paper to separate it from the vocabulary. There are 273 illustrations both interesting and helpful. On examination one wonders how so much can be had in such a small space and for so little cost.

PSYCHIATRY FOR NURSES—Louis J. Karnosh, B.S., Sc.D., M.D. Associate Clinical Professor of Nervous Diseases, School of Medicine, Western Reserve University; Director of Neuropsychiatry, City Hospital Cleveland and Edith B. Gage, R.N., Supervisor, Neuropsychiatric Division, City Hospital, Cleveland. Published by the C. V. Mosby Company, 1940. Priced at \$2.75. A text with the combined view point of a doctor and a nurse, the knowledge of two persons well trained in psychiatry and in teaching

the subject, is here brought to the public in a well balanced book, complete in up to the minute material and easily adaptable to the use of the classroom.

KANSAS MEDICAL ASSISTANTS

The Kansas Medical Assistants Society, one of the first of such organizations in the country, recently completed its first year. It is the society's aims to provide educational advantages to its members through lectures, demonstrations, discussions, et cetera.

The first year 302 membership cards were issued of which 187 members attended the second annual session held during May. Medical assistants in Barton, Finney, Ford, Lyon, Reno, Riley, Sedgwick, Shawnee, Sumner and Wyandotte counties have organized local societies and have held monthly meetings with guest speakers discussing credit problems, violations of ethics, explanation of problems in the preparation of physicians' income tax reports, medical secretaries training, the need for physical examinations before marriage, psychoanalysis, and the preparation of specimens for laboratories. At the present time assistants in several additional counties are organizing local groups. The society was formed under the guidance of The Kansas Medical Society, and local groups are sponsored by the local county medical society.

Information regarding the organization procedure and ultimate aim of the society has been requested from interested persons in several states, and during the year a member of the society appeared on the organization program of another state medical assistants group. The paper presented at that meeting will be published in an early issue of the medical journal of that state.

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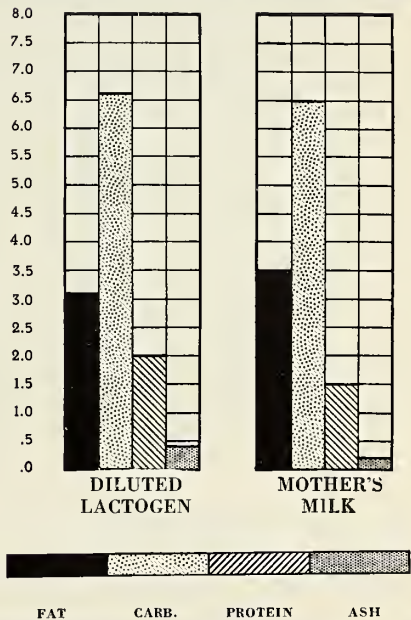


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AUXILIARY

PRESIDENT'S MESSAGE

The National Auxiliary meeting at Cleveland was not only inspiring but it was informative and constructive. About 1500 delegates and guests were registered and proved their interest by a regular attendance of almost the entire program.

The National Auxiliary urges that for this coming year we study nutrition, as the first line of defense, but always under medical guidance. This is to be an educational year for each one of us. National plans and objectives will be given in the July bulletin. Your president urges each chairman in the State, as soon as she receives the July bulletin to formulate her elastic program for the coming year. Send these outlines immediately to her so that she may submit them to our advisory board for their approval. This must be done before we can present them to the auxiliaries in the early fall.

Mrs. W. Y. Herrick.

NOTICE

Your present publicity chairman desires the auxiliaries to send all news of their auxiliary activities, and items of personal interest about their membership to Mrs. Ransley J. Miller, 1300 Lakeside Drive, Topeka, not later than the first of each month.

NEW OFFICERS OF WOMAN'S AUXILIARY TO THE KANSAS MEDICAL SOCIETY 1941-1942

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Second Vice President—Mrs. J. K. Harvey, 801 S. 9th St., Salina.
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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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DELEGATES FROM KANSAS TO THE NATIONAL AUXILIARY MEET- ING AT CLEVELAND

Mrs. W. Y. Herrick, President, Wakeeney, Kansas.
Mrs. C. D. Blake, Corresponding Secretary, Hays, Kansas.
Mrs. Foster Dennis, Dodge City, Kansas.
Mrs. M. A. Brawley, Frankfort, Kansas.
Mrs. B. W. Lafene, Marysville, Kansas.
Mrs. J. K. Harvey, Salina, excepted to attend the convention. Accompanying Mrs. Herrick to Cleveland was Miss Opal Garrett, R.N. Mrs. F. P. Helm from Topeka also attended.

ECHOES FROM THE NATIONAL CONVENTION

Ohio, newcomer to the ranks of the Auxiliary, already has more than 1500 members, in this its first year. Congratulations!

Mrs. V. E. Holcombe in her message to the National Auxiliary at Cleveland, Ohio, quotes the oriental proverb, "A journey of a thousand miles starts with a single step." We find Mrs. Holcombe's message interesting reading, particularly so, is the report of the various projects, sponsored by the state and county auxiliaries.

One progressive auxiliary in a mid western state raised sufficient funds to purchase an iron lung and an infant respirator for their hospital.

Nor so ambitious perhaps but also of service, the project of a smaller auxiliary—presenting yearly subscriptions of worth while magazines to the hospitals in their community.

Wisconsin Medical Society is celebrating its 100th anniversary.

The last word heard from our President, Mrs. Herrick, was from Chicago, enroute to Milwaukee—she expects to get home June 20th.

The Shawnee County Medical Auxiliary met at the home of Mrs. L. A. Curry, of Topeka, on Monday, June 9th, for a picnic lunch. Twenty-three members were present. Mrs. C. B. Van Horn installed the new officers, who are as follows: President, Mrs. J. L. Lattimore; Vice President, Mrs. Byron J. Ashley; Secretary, Mrs. F. C. Beelman; Treasurer, Mrs. Richard F. Boyd. Mrs. Richard F. Boyd was program chairman for Shawnee County Auxiliary, and did excellent work in furnishing guest speakers from the speakers bureau during the year. Many thanks!



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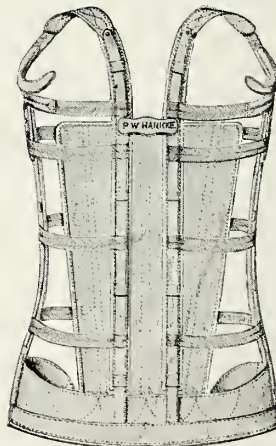
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THE PROBLEM OF CONTROLLING TUBERCULOSIS*

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Huston, Texas

In considering this problem one must first recognize two facts about pulmonary tuberculosis, namely:

(a) It is a contagious disease.

(b) Not all persons afflicted with the disease are contagious.

Mention is made of the first fact not with the thought of announcing any wonderful new concept towards the disease, but merely to emphasize and keep that point firmly in mind. It is the duty of all physicians to dispel certain erroneous ideas which the laity may have that are dangerous to their health. Contrary to what many lay persons firmly believe, everyone does not have tuberculosis germs in his system that are only waiting for him to become "run-down" for them to become active. The only way that a healthy individual can acquire tuberculosis is by coming in actual contact with the sputum or excreta of another individual who has the disease.

Looking at the second fact that not all persons afflicted with the disease are contagious it may be observed that roughly these cases fall into two groups:

(1) Individuals having pulmonary tuberculosis and a negative sputum. In other words, closed cases. In this group are the majority of the first-infection or childhood cases, the arrested or apparently arrested cases, many of the so-called "early" cases, and many of the type having old chronic fibroid or productive lesions.

(2) Individuals having pulmonary tuberculosis and a positive sputum. In other words, open cases. This group comprises almost exclusively the re-infection cases having pulmonary lesions best described pathologically as the acute-exudative and the caseous-pneumonic forms of tuberculosis. The greatest majority of cases fall into the caseous-pneumonic group having open cavities and highly positive sputum. These are the advanced cases most commonly

seen and readily diagnosed. These are the dangerously contagious cases that, in being permitted to circulate freely among their fellow-men, are creating more and more of the so-called "early" cases which we have been endeavoring to find and treat.

Now having established the fact that tuberculosis is a contagious disease and also pointed out which form of the disease is mostly highly contagious, the problem of what can be done to control the spread and eradicate it presents itself.

If there were a method of vaccinating or inoculating an individual against tuberculosis as with typhoid, small-pox, or diphtheria, the problem would be more simple. But there is not any such proven method. There is, however, a method which in the long run would be effective if it could be followed out to the letter. Find every case of tuberculosis. If it is an open, contagious case, isolate and treat that individual and keep him quarantined until he is either converted into a closed, sputum negative case, or until he dies. This may sound drastic and it is. However, when considering that each year over 70,000 persons, most of whom are in the prime of life, die from the disease, and, since it is humanly possible to eradicate this evil, drastic measures are most certainly indicated.

With these facts in mind the problem of control boils itself down to four principal measures.

LAWS GOVERNING THE COMPULSORY ISOLATION AND HOSPITALIZATION OF OPEN CASES

Many states already have some form of laws designed for the compulsory isolation and quarantine of cases of open tuberculosis that will not respond to ordinary persuasive reasoning, arguing that they are a public health menace. Every state should have such a law. A good strict one should be designed that can be definitely enforced.

More stringent rules have been applied to contagious diseases before with excellent results. For example, consider leprosy. Lepers are segregated in colonies far from their homes and must observe very strict rules and regulations. Persons afflicted with that disease have the same constitutional rights as anyone else, yet some of those rights are taken from them when they are forced into quarantine. More-

*Presented at the 82nd Annual Session of The Kansas Medical Society, Topeka, May 13, 1941.

over, leprosy is more mildly contagious than is tuberculosis.

Again witness the effectiveness of legal control by quarantine of other contagious diseases such as small-pox, diphtheria, typhoid and numerous others. Tuberculosis is as much, if not more, dangerous than those diseases.

SUFFICIENT AND PROPER HOSPITALIZATION FACILITIES

The first consideration regarding this measure is the number of beds that are necessary. The minimum accepted standard is two beds for every annual death. Forty-one states¹ lack that minimum number and twenty-seven have less than one bed per annual death. It is of prime importance to see that there are a sufficient number of beds available because the value of any successful attempt at finding these cases will naturally be offset if there are no beds in which to place them. By the same token, if there are no laws compelling them to remain isolated during their period of infectivity, case finding will go on forever. The above statement does not necessarily mean that even a two bed per death ratio would be enough for all communities alike. In some, the problem is greater than in others and many more than that would be needed. The fact of the matter is that there should be a sufficient number of beds to take care of all the cases.

Another fact under this heading is that tuberculosis institutions should be as well equipped as general hospitals. No longer are these institutions merely sanatoria. The old boarding house treatment of tuberculosis is definitely out. The time honored rest, good food and more rest has been supplemented in over half the cases by definite active measures for treatment. In practically all of the open, advanced tuberculosis cases some form of collapse therapy is immediately indicated. This means that the tuberculosis institution must become a hospital fully equipped for pneumothorax and major chest surgery. Thus operating rooms and graduate nurse personnel is necessary. Chest surgery is not the only surgical consideration, as many of these patients during the course of their long stay in the hospital develop other conditions requiring surgical intervention. There must be facilities for general and gynecological surgery, orthopedic and genito-urinary surgery as well. Tuberculous mothers should be delivered of their babies in these institutions which means departments for obstetrics and pediatrics. All of which indicates the necessity for the staff of the institution to be composed of doctors in all the various specialties.

A most important result to a community in having an institution like this is the remarkably rapid in-

crease in the interest of the medical men in that community towards tuberculosis. Their increased interest and education in the subject is in turn imparted to their patients and the lay public in general. As soon as the general practitioner sees active measures with rapid results taking place he becomes interested. He will attend medical-surgical and clinical-pathological conferences held at such an institution regularly in an attempt to learn what was not taught him in medical school. Thus a great step in tuberculosis education is accomplished.

The next part of a good control program follows in proper order.

CASE-FINDING

Improvements in dealing with this measure are occurring rapidly each year. In the first place more attention is being paid to adults and to the x-ray. In the words of Dr. Robert Plunkett³ of New York, "Pulmonary tuberculosis is a disease primarily of adults." There seems to be a gradual tendency towards de-emphasizing the importance of childhood tuberculosis. This is logical for many reasons. In the first place the majority of first-infection or so-called childhood tuberculosis is benign and has a tendency to get well of its own accord. The cavity is the main source of tuberculous infection. As Dr. Robt. G. Bloch⁴ points out, "There is no better prevention for children as well as adults than the elimination of the sources of infection." Dr. Frank W. Burge² very beautifully pictured the dangers of the open case in an editorial in the *Journal*, *Diseases of the Chest*, when he said, "Thousands of people, sick with tuberculosis in an infectious state, are going about in the District of Columbia, expectorating into the grass of the beautiful parks where the little children of our legislators play. The little baby's hand goes down into the cool green grass and comes up gummy with millions of tuberculosis germs to go into that rosey little mouth.—Tuberculous waiters and cooks are feeding our heroes, tuberculous nurse maids are in their homes, tuberculous clerks are handing them infected papers, and infected stenographers are coughing at their side." A lovely picture (in a morbid sort of way) but it can just as aptly apply to any of us and our families if we reside in a locality that is in need of an effective control program.

As for the increased use of the x-ray, this can be summed up in few words. Tuberculosis should be seen and not heard. Even in the hands of experts the stethoscope must bow to the use of the fluoroscope and the x-ray.

Case finding then, will be more productive of results when applied to adults and the lavish use of the x-ray.

In a survey of where tuberculosis deaths occur, reported in the *New York State Journal of Medicine*, November, 1939, Edward X. Mikol⁵ found that 49.2 per cent deaths occurred in tuberculosis hospitals and tuberculosis departments of general hospitals; 29.6 per cent in homes; 11.2 per cent in state mental and penal institutions, and 9.9 per cent in general hospitals. This article also points out the danger of infection to members of the family from those cases which die at home.

Mass surveys by means of x-rays of groups of population is one of the best methods of case-finding. Some of the types of surveys with results are described in the following discussion.

Tuberculosis in Mental and Penal Institutions.—The high percentage (11.2 per cent) of tuberculosis deaths that occur in these institutions as described by Edward X. Mikol⁵ is significant. In Minnesota, a survey of about 12,000 State Mental Hospital inmates revealed 9.2 per cent who had x-ray evidence of the disease. In a New York State Mental Hospital survey of 2,000 ambulatory patients, 3.6 per cent had tuberculosis. A survey made by David Reisner⁶ of the population of two penal institutions in New York City revealed 3.7 per cent tuberculosis in one and 10.6 per cent in the other. Statistics such as these indicate very clearly the importance of mass x-ray of all the inmates of every such institution.

Case-Finding in Industry.—This is a fertile field worthy of inclusion in any well organized tuberculosis control program. X-ray of the workers and newly hired employees in big industry helps both the industrial executives and the control program as well by cutting down loss of time from work and reducing compensation costs. The state and local associations should establish a closer working contact with industrial and labor organizations. Some insurance companies and labor unions have already become active in promoting health education and many case-finding projects in industry have been undertaken.

Unrecognized Tuberculosis in General Hospitals.—Some very illuminating and instructive surveys have been made along this line in Wisconsin and New York. Robt. E. Plunkett and Edward X. Mikol⁷ report, in a study made of 4,853 admissions to fourteen general hospitals, that 2.6 per cent showed x-ray evidence of tuberculosis. In 0.6 per cent of the whole group studied, tuberculosis had not been considered as a possibility, thus the x-ray revealed the first evidence of disease. Using this figure as a basis would mean that there are more than 40,000 unrecognized cases of tuberculosis hospitalized in general hospitals in the course of one year.

This illustrates the danger of transmission of the disease to nurses, internes, and other personnel by these hidden cases. Many other unsuspected thoracic diseases were also encountered. It is thus evident that here is a comparatively new field that could be worked to advantage all around.

Space will not permit inclusion of many other mass surveys that have been started in other parts of the country. For an excellent, detailed description of mass surveys in case-finding reference could be made to the supplement to the *American Review of Tuberculosis*, June, 1940, compiled by Dr. Herbert R. Edwards⁸.

The cost of using the x-ray in mass survey may at first glance seem prohibitive. It is most certainly more expensive than tuberculin testing or just physical examination, but at the same time, there is no comparison with the information obtained. In the long run the economical savings will greatly outweigh the expense incurred. Witness for example, the great saving to the Federal Government that has occurred by the program of x-raying each man at Army induction stations. Since the last war the Federal Government has spent a total of \$960,000,000 for medical care and compensation for cases of tuberculosis developing among soldiers and sailors. This represents an average cost of \$10,000 per case. Dr. Robert E. Plunkett⁹ in discussing the results of x-raying 12,414 men at three army induction stations in New York State; stated that, "During three months the State Department of Health has saved the Federal Government about \$1,050,000. Of the 12,414 men x-rayed, 106 were rejected because of evidence of tuberculosis. The cost of x-raying these men was about \$7,000. The cost of discovering each case of tuberculosis was \$66. On the basis of the policy established by the federal authorities during the last war, these cases would have cost the Federal Government \$1,050,000 had they been taken into Army service, as compared with the cost of keeping them out."

Methods have been devised, that are worthy of being investigated, to cut the cost of mass x-rays. One that is working out satisfactorily in some parts of the country is the use of paper film. With the use of paper roll film the cost is seventy-five cents per examination. Another is the fluorographic method utilizing thirty-five m.m. film at a cost of five or six cents. General Electric is putting out an equipment using four by five film. Thus there are many types of equipment to choose from in carrying out a mass survey program.

The fourth and last part of a good control program has to deal with the following:

FOLLOW-UP AND REHABILITATION OF CASES

The follow-up of cases is very important. Every case should be registered and the records kept on file until the patient dies or moves to a new community, at which time they should be forwarded to the new community. Frequent, regular periods of re-examination should be maintained, including both x-ray and sputum examinations. It is particularly important to instruct an arrested patient to report, with sputum, for examination if and when he should develop a cold. Many cases do not produce any sputum unless they develop a cold and many times the so-called cold turns out to be re-activity of their tuberculosis.

The problems of rehabilitation are many and intricate and have long been neglected. It is made more complex by the fact that economic security of the family unit should be maintained without the stigma of a dole during the long period while the activity of the disease persists. This tremendous problem could be greatly lessened in two ways. First, the discovery of the case earlier before loss of work and money spent on erroneous diagnoses has taken its toll of the family savings. Too often is the onset of tuberculosis mistaken for a severe cold, flu, pneumonia and even thyroid trouble and cancer of the lung and valuable time is lost when a simple x-ray and sputum examination would reveal the true disease. Secondly, by institution of proper collapse measures earlier thereby saving time. Not putting the patient to bed for from three to six months and waiting (to see if that cavity won't close spontaneously) before starting a pneumothorax. These are months wasted and that patient's family must eat. Also, during that loss of time, the cavity might get larger, adhesions form, and possibly a spread to the other side occur.

The last concerns the retraining of some of these individuals to assume a new place in industry. Many can go back to their old jobs but others must be trained for less difficult work. This involves maintaining competent teaching personnel and facilities for educating patients for light work.

SUMMARY

1. From the public health point of view it was emphasized that the most dangerous individual with tuberculosis is the open case.

2. The necessity for the creation of compulsory isolation and quarantine laws regulating the contagious cases was pointed out.

3. Two beds per annual death is the minimum standard for all communities.

4. A tuberculosis institution should be considered a hospital and have all the treatment facilities and

personnel necessary for all types of medicine and surgery.

5. X-ray examination is of the utmost importance in case finding.

6. Particular attention should be paid to adults.

7. Various mass survey programs were described.

8. Follow-up of cases and rehabilitation of the patient holds the last but not the least place in any control program.

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Arteriosclerosis, the hardening of the arteries which threatens all persons over fifty years old, is the vastest of all medical problems of the future as well as the most neglected, Irving S. Wright, M.D., New York, declares in The Journal of the American Medical Association for September 14.

With the average length of life prolonged to over sixty years, he points out, such a disease condition becomes of increasing importance. There are definite degenerative changes present somewhere in the arterial trees of practically all individuals over the age of fifty, thus making possible the onset of arteriosclerosis. "Of the population over fifty years of age," Dr. Wright says, "sixty per cent (fifteen million) will die of some cardiovascular-renal syndrome (set of symptoms referable to the heart, blood vessels and kidneys) whereas only nine per cent will die of cancer. A very large but as yet undetermined portion of that sixty per cent will die as a result of degenerative changes of the arteries, with the cardiac (heart), renal (kidney) or other syndromes merely the results of secondary ischemia (local and temporary deficiency of blood) or hemorrhage.

"As these syndromes frequently produce prolonged and painful disability before death, a change in philosophical approach might well be considered. Perhaps the mere prolongation of life should no longer be sought as the highest goal but rather longevity only to such a degree as it is compatible with happiness and a full life free from pain and invalidism.

"The medical schools for the most part give woefully inadequate training in the study and care of arteriosclerosis. Too frequently the practicing physician fails to recognize its manifestations until gangrene has occurred. The public cares little for what it considers the vagaries of old age, although all who achieve old age are liable to them. Too few research workers have engaged in its study, to a large extent because of lack of endowment. Truly, it has been a neglected field in proportion to its importance."

SUDDEN HEART DEATH*

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Many laymen suspect sudden death as a likely possibility whenever any heart abnormality is diagnosed. They say "I knew it" if the physician appraises them of this possibility in the case of a relative. The lay coroner does not hesitate to name heart disease as the cause of death when a sudden unexpected death occurs although statistically only four per cent of all heart deaths are sudden. Many persons with heart disease through fear make invalids of themselves because they too have considered any type of heart abnormality as a frequent cause of sudden death. Since heart disease of some types is the most frequent cause of sudden death it is important that we as physicians be possessed of the facts on the subject. The lack of such wisdom on several occasions prompted a review of the literature and of my own records.

Within the past few years a number of significant articles have dealt with sudden death and particularly with various aspects of sudden heart death. Available data enables one to say that sudden death is or is not a likely possibility in any given case. Proper therapy can apparently prevent or delay this form of death in many instances. Occasionally patients are seen who have or whose families have been told that they may die suddenly because of some cardiac abnormality they have. Such advice is true in some but very improbable in many instances. It is questionable whether such a prognosis should be given to any patient but certainly a responsible discreet member of the patient's family should know if sudden death is a likely possibility.

The present discussion deals only with sudden death in persons with cardiovascular disease. Such sudden unexpected death in less than thirty minutes will be discussed from the aspect of: etiology and pathological anatomy; pathological physiology; accidents in treatment; and comments on the commonest cardiovascular diagnoses.

No doubt many relatively rare cardiac conditions such as rupture of a papillary muscle, medial necrosis cystica, ball valve thrombus, intercepted embolus, etc., may cause sudden death in a high percentage of such cases, but the rarity of these abnormalities permits them to be omitted from a practical discussion.

Clawson⁶ reviewed 23,972 autopsy records and studied in detail the 928 cases of coronary sclerosis

which occurred in the entire material. Twenty-eight per cent of the patients dead of coronary sclerosis had died suddenly. This has been quoted as being the commonest cause of sudden death.³⁶ Levy²² found that sudden death in his series of cases with coronary sclerosis occurred more frequently in persons with coronary thrombosis and anginal pain. Thirty-three per cent of that group died suddenly—whereas in another group where no anginal pain was reported the incidence of sudden death was only eleven per cent. In Clawson's 928 cases only five had a ruptured myocardium with hemopericardium. This is significant since ruptured myocardium with hemopericardium is not ordinarily a rarity after fatal acute coronary thrombosis. Krumbhaar and Cromwell⁴⁸ studied the records of 654 cases of spontaneous rupture of the heart and found the great majority due to antecedent coronary disease with thrombosis and infarction. Fulton says one out of eight deaths in the two weeks following myocardial infarction have acute hemopericardium. Scherf points out that patients with rupture of the myocardium and tamponade from extravasated blood may live an hour or two. This has been emphasized by other authors (Goodall and Weir)⁴⁶. Of three ruptured hearts among my patients who were recovering from coronary occlusion death was sudden in two but came two hours after rupture in one. The three were proven at autopsy. In Levine's classical monograph on coronary thrombosis, rupture of the myocardium occurred nine times in forty-six autopsied cases. Goodall and Weir in a large service reported eighteen cases of ruptured heart collected over a series of years in their experience. Emotion was considered the cause in one healthy heart that ruptured. Coronary sclerosis or occlusion was present in the others. In one of these the rupture had occurred over a fortnight before death and blood had escaped into the left pleural cavity and had been repeatedly drained. These facts suggest that sudden death in acute coronary thrombosis though not frequent is certainly not a rarity from ruptured myocardium and hemopericardium. It is interesting to note that several writers have insisted that sudden death at the time of a coronary occlusion is rare. Though Parkinson and Bedford³³ in their paper mentioned it as a possible complication of infarction, they said "at any time." With a large number of cases at the Cardiff Royal Infirmary, Boissard and Duguid concluded an article on the subject by saying: "Sudden death as exemplified, for instance, by a man falling dead in the street, is a common enough occurrence and coronary thrombosis is sometimes cited as one of its causes, yet we have never, in spite of careful search succeeded in demonstrating a gross

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thrombosis in a coronary artery in such a case." On several occasions I have seen hearts with areas of myomelacia cordis indicating infarction of several days duration where the history indicated practically no pain was complained of and usual activity had been pursued until sudden death came. It should be remembered that sudden death several hours or days after an acute occlusion or in the presence of chronic complete occlusion is not unusual.

The summaries of these studies is significant to me since in our experience the commonest etiological cardiac diagnosis is arteriosclerotic heart disease, and in this type coronary occlusion though probably often not apprehended is relatively frequent.

Other etiologies and pathological anatomical states are associated with sudden heart death. Luetic aortitis was considered the cause of 101 out of 300 sudden deaths reported by Martland. Of the remaining 199 all but twelve had aortic regurgitation, stenosis or atresia of coronary ostia. Norris reported out of 14,000 autopsies two cases of syphilitic aortitis in youths aged nine and seventeen. Sudden death occurred in both cases. He quoted Clawson and Bell who found twenty-five sudden deaths in 126 cases of adult syphilitic aortitis an incidence of twenty per cent. Two hundred patients with syphilitic aortitis at Bellview came to autopsy on an average of 22.7 years after acquiring the disease. One patient died of aortitis eighteen months after his chancre. The deduction from these studies is that sudden death from luetic aortitis might be expected in from twenty to thirty-three per cent of cases, and if it occurs it is usually long after acquiring syphilis.

It is significant that the only valvular abnormality which has been justly blamed for sudden death is aortic stenosis. Regardless of etiology or other anatomical or functional heart disease that may coexist this valve affliction holds a threat per se of sudden death according to the literature. As an isolated lesion it is rare and when seen is usually from arteriosclerotic changes in the aged or as part of rheumatic carditis in youth and middle life. All the cases that I have seen fell into these two groups, and though death was sudden in a recent case—the patient had had, as is often the case, sieges of congestive failure repeatedly in the few years prior to death. Eleven to fourteen per cent of patients reported in the literature on aortic stenoses died suddenly.

Though chronic myocarditis as an entity has given way to more specific and accurate nomenclature, acute and toxic myocarditis seems to have been given more recognition in recent years. In discussing three sudden deaths from acute interstitial myocarditis which they were reporting, Helwig and Wilhelmy¹¹ said that eight out of fifty-two reported cases of acute

interstitial myocarditis had died suddenly. Begg in *Lancet* reported electrocardiographic studies made on 100 cases of severe faucial diphtheria and was able to show variations from normal which he felt indicated toxic myocarditis in eighty-four per cent of the group. Scherf⁴¹ has stated that definite transient electrocardiographic changes are commonly observed during acute infections. I saw Chiari⁷ demonstrate the heart of a four year old boy who died suddenly of diffuse interstitial myocarditis on the third day of his diphtheria. The same pathologist a few weeks later demonstrated the heart of a man of thirty-two who had died suddenly of myocarditis associated with tonsillitis. Chiari spoke of four types of myocarditis. He stated that one saw myocarditis in septicemia as from abortion and in such cases circumscribed abscesses might be found. He said in diphtheria and typhoid one saw interstitial myocarditis. Rheumatic myocarditis with Aschoff bodies was the third group, and occasionally is seen the fourth type—a spontaneous or idiopathic myocarditis characterized by interstitial involvement of chronic nature as evidenced by lymphocytes. This he said is the type occurring in lues. Fatal acute myocarditis is in our State, no doubt infrequent but should be remembered. In retrospect I am convinced that the sudden death of a middle aged man whom I had sent home following pneumonia was from such a cause. He insisted on walking for his mail the day after leaving the hospital and died suddenly. The only practical aspect is that sudden death from acute toxic myocarditis might be prevented in some instances if absolute rest be enforced until all evidence (tachycardia, poor heart tones, temperature, sedimentation and in some instances even electro-cardiographic studies) of activity of the primary infection or toxemia had subsided.

Pulmonary embolism is said to be much more frequent than is diagnosed. In persons who have had any congestive failure or who have had surgery (especially on thyroid, gall bladder and salphinx) it should be in mind at all times. It is stated (Scherf) that twenty-five per cent of persons who have had some degree of congestive heart failure have thromboses in pelvic veins . . . and it is common knowledge that pelvic and even femoral thromboses are not rare after surgery. These thrombi frequently give rise to pulmonary emboli and more often than suspected in the old man or woman the embolus has been of sufficient size to cause acute right heart failure and in some . . . sudden death. Definitive treatment administered soon enough may save the lives of many. At autopsy made possible by sudden death I have seen two hearts where large emboli, proven to have come from femoral veins, had become

lodged in the patients foramen ovale in each case. This which Koritschoner called "intercepted embolism" no doubt is uncommon and defies therapy, but pulmonary embolism is no rarity and deserves to be remembered to avoid delay in directing therapy.

In recent years non-penetrating wounds of the heart have been presented as entities to be reckoned with (Beck, Warburg). Of the protocols of 197 cases collected by Warburg⁴³—"seventy-four died from their cardiac disease . . . the greater number died in failure with congestion; but in nearly all the cases where the heart was ruptured (nine) death was sudden; on the other hand "sudden" death was seen in seven cases where we have no knowledge of rupture." In summary sudden death occurred in sixteen out of seventy-four (21.6 per cent) heart deaths the result of non-penetrating lesions of the heart.

Other anatomical abnormalities mentioned in the literature as not infrequent findings after sudden heart deaths are: Acute miliary infarction (Liza and Hart),¹⁶ acute coronary thrombosis (Liza and Hart; H. Smith);³⁹ Ruptured aortic aneurysm (Liza and Hart); Ruptured Esophageal varices; Fatty degeneration of the myocardium (Lambert);^{18,19} Ball Valve Thrombus (LaPlace).¹⁵

One profits from the history and from pathologist at the autopsy table in learning what conditions seem to most frequently predispose to sudden death, but in preventing those accidents the pathological physiology is the dominant concern. Coronary sclerosis, coronary occlusion, leucic aortitis, acute myocarditis and aortic stenosis appear to be the principal anatomical abnormalities that have been found in the majority of sudden heart deaths.

Associated with coronary sclerosis and coronary thrombosis one frequently finds various arrhythmias. Premature beats arising in one of the ventricles or in the specific tissue as well as auricular fibrillation and flutter are among the commonest physiological diagnoses made. Conduction disturbances whether in the main bundle or one of its branches are not nearly as frequent in my patients as are the disturbances of rhythm due to exaggeration of the faculty of automaticity—as characterized in premature beats and auricular fibrillation and flutter. These facts lead me to believe that sudden death due to ventricular fibrillation is, in the type of problems confronting us, more frequent than that due to cardiac standstill. The literature is not in accord on this subject. Some say standstill is more frequent; others say ventricular fibrillation. Levine says: ". . . it is impossible to state, as it would be only a rare fortuitous experience if one actually obtained electrocardiograms at the moment of the final exitus." The matter is an im-

portant one since quinidine was beautifully shown by Nathanson²⁹ and corroborated clinically by many to inhibit the incidence of premature beats and "Pre-fibrillation" of the ventricles. On the other hand if we feel that lack of automaticity and conductivity coexist to the degree of cardiac standstill, therapy would be much different. As in a case where rapid irregular rhythms alternated with asystole reported by Borg,³ observation and study could suggest poor automaticity and standstill. There is no doubt that the two great immediate physiological causes of sudden heart death are: ventricular fibrillation and cardiac standstill. It is well to remember that usually a variety of findings may predict the probability of one or the other of those fatal states. Ventricular fibrillation may result from many anatomical or physiological abnormalities. Premature ventricular systoles arising in different foci often interrupt the sinus rhythm of a heart with widespread myocardial damage and irritability the result of arteriosclerosis, myomelacia cordis, fibrosis from other causes, anoxia from any cause, toxic influences such as digitalis intoxication and diphtheria. The files of any physician doing general practice or internal medicine invariably contain many records of such hearts. It is wise to make use of the electrocardiogram whenever any rhythm disturbance is not easily and definitely explained. Certainly a ventricular tachycardia of 200 can not be differentiated by ordinary means from similar rates of supraventricular origin. In such a case digitalis if given to the former might make things worse though in the latter it would be definitely indicated. As in tachycardias so also in bradycardias the electrocardiogram is the only dependable way to learn whether a rate of thirty, forty, or fifty is of sinus origin and hence harmless or nodal or idioventricular and indicating damage of the conduction system. I know of a man with a heart rate of thirty who lived with a known braycardia from the time of first examination to collect his twenty-five thousand dollar twenty-year endowment and who then was still enjoying good health. He had a sinus rhythm and rate of thirty. I have a patient with a nodal rhythm and rate of thirty, who in his sixties does heavy work here, but vacationing in a high altitude had recovered from an Adams-Stokes seizure. By and large bradycardias even though not of sinus origin do not endanger the individual as do the various tachycardias. Anoxia as caused from backed up gas fumes precipitated a dangerous tachycardia in a coronary sclerotic under my care, though the younger members of her family suffered only nausea and headaches from the fumes, which they all unknowingly inhaled for several hours. My patient's electrocardiographic changes persisted

for several days. Sudden death has occurred from anoxia from this and other causes.

Ventricular dilatation and acute ventricular incompetence have received mention as causes of sudden death and no doubt they occur often as a result of pulmonary embolism. Even in such cases rhythms incompatible with life no doubt actually determined the issue.

Hypertension accounting as it does for more than does any other cause of cardiac complaints in middle life prepares the way as do thyrotoxic states for sudden deaths from fatal rhythms in some small per cent of cases.

By all estimates the one physiological diagnosis deserving discussion as leading to sudden death is angina pectoris. The definition of the malady should as did Heberden's include the phrase "capable of causing sudden death." Heberden's classical account of the symptom complex remains unchallenged though the syndrome he described is now accepted to mean only the physiological type or effort type in contrast to the angina of rest—coronary thrombosis. It has been generally decided that Heberden's angina is due to partial anoxia of the myocardium. Every effort should be made to decide if the man who has anginal attacks has coronary sclerosis and whether the evidence indicates widespread coronary involvement. The history aided by electrocardiographic studies and ophthalmoscopic examinations enables these decisions to be made. The prognosis is much worse and sudden death is much more likely if anginal attacks occur in a person with coronary sclerosis with myocardial infarction. Such decisions based on cursory studies can well be classed as errors of omission and definite neglect on the part of a physician.

Other aspects of angina have received such ample discussion in current writings as to permit brevity here, but it must always be remembered that the possibility of sudden death stalks the anginal patient.

Another group of patients who may die suddenly are those who may need certain medications. In giving digitalis LaPlace has advised against combining large doses of calcium. It has been repeatedly advised by Joslin and others that the blood sugar level in older people should not be reduced too sharply. Digitalis has accounted for many sudden deaths; and in giving that drug every patient is his own rule. It was shown that ascitic fluid in previously digitalized persons often stores digitalis and sudden free diuresis in persons with such ascites may cause acute digitalis poisoning. For this reason if digitalis is to be given to the person with congestive failure, rest, paricentesis, and diuresis is often practiced before digitalization is started. Certainly

edematous digitalized persons should be given mercurial diuretics cautiously. Sudden heart death has been brought on by large doses of thyroid extract in myxedema. It is generally known that arsenicals should be very cautiously if ever given to cardiovascular luetics since sudden death is a known possibility.

Thus there are pathological anatomical, and pathological physiological conditions from which sudden heart death most frequently occurs, and accidents in therapy have been cited. The information affords prognostic value as well as indicating therapy which may be life saving or life endangering. No criterion enables the physician to definitely prognose sudden death in a patient though he can appraise each case and make a statement as to the relative possibility of sudden death. For example, one may say in a well established case of luetic aortitis that sudden death may be the fate of one out of three or four such persons, and tendencies to arrhythmias may suggest which patient.

SUMMARY

1. Cardiac sudden death tho accounting for only four per cent of heart deaths is the commonest sudden death.
2. Coronary sclerosis with heart pain in persons who have had coronary occlusion is the combination most frequently seen in sudden heart death. (Up to thirty-three per cent of these have died suddenly.)
3. Sudden death in luetic aortitis is common. (Up to thirty-three per cent.)
4. Aortic stenosis is the only valvular abnormality in which sudden death is a threat. (Eleven to fourteen per cent.)
5. Toxic myocarditis may cause sudden death. Rest during infections and in convalescence is valuable. All diagnostic criteria should be used to establish the fact that the "activity" of an infection is over before allowing patients up and about.
6. Non penetrating wounds of the heart have been followed by sudden death in twenty-one per cent of a reported series.
7. The definition of angina pectoris should include the phrase "Liable to die suddenly."
8. There are therapeutic sudden deaths in heart disease.

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COBRA VENOM ANALGESIA IN SURGERY*

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Down through the ages the snake has been the emblem of healing and mystery. The staff of Aesculapius, with its entwining serpents, is a relic of antiquity which today not only identifies us with the medical profession but is symbolic of the ancient rites, superstitions and ignorance out of which scientific medicine has grown.

In recent years, snake venoms have been used therapeutically in epilepsy and certain blood dyscrasias and have proven efficacious in the control of hemorrhage. Of particular interest to the surgeon is the venom of the *Naja Naja* or Indian Cobra which is rich in a neurotoxin, possessing powerful analgesic properties. The satisfactory response to venom therapy in a series of twenty-eight patients suffering from the intractable pain of chronic arthritis, encouraged its use in surgery where it is now being employed pre and postoperatively with gratifying results.

PHARMACODYNAMICS OF COBRA VENOM

Crude venom is a transparent, amber-colored fluid with a specific gravity of 1.110, is acid in reaction and has a slightly disagreeable taste. While it contains hemorrhagins, agglutinins and thrombase in varying quantities, its chief constituent is a thermostabile substance called Neurotoxin which has a special affinity for the respiratory center and the neighboring ganglia of the ninth, tenth, eleventh and twelfth cranial nerves. The hemolytic principle is removed by passing the venom through a Seitz filter and the cytolytins are separated by a process of heating since they coagulate at different temperature levels. By these means an almost chemically pure solution of the neurotoxin is obtained. The exact chemical nature of neurotoxin is as yet un-

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known but the recent work of foreign investigators indicates that it is related to the carbohydrates and is therefore probably a glucoside.

Cobra venom is contended by some to act peripherally on the nerve trunks and nerve endings much in the manner of curare but numerous experiments performed by Macht and his associates,^{1,2,3,4} point indisputably to the fact that its action is on the central nervous system, which view is shared by the author who has administered over 328 injections to seventy-four patients with positive clinical confirmation.

The neurotoxin has a selective action on the pain center, *per se*, which is located in some subcortical area, presumably in the hypothalamus but its *Modus Operandi* differs distinctly from that of morphine inasmuch as it does not depress the entire cerebral cortex, rendering the recipient stupid and inco-ordinate. A patient given an injection of cobra neurotoxin not only is relieved of pain within forty to sixty minutes but actually feels better physically and mentally. The psyche is improved, the vision becomes clearer, hearing is enhanced, the appetite is increased and there is a general sense of well-being similar to that induced by caffeine.

Neurotoxin acts more slowly than the narcotics but the analgesia effected is more prolonged and increases with each succeeding administration, having a definite cumulative action due to its slow rate of dissipation within the brain substance (Macht^{5,6,7,8,9}) morphine by comparison, exidizes rapidly producing a profound depression of all senses then as suddenly wears off making it necessary to repeat injections at three or four hour intervals for the continued alleviation of pain. Blood morphology and clotting time are not affected by the use of cobra venom even when given over long periods. Liver and kidney functions remain unimpaired. (Macht^{10,11})

The venom when accurately assayed biologically makes its administration controllable and the resulting dosage is measured in mouse units. A mouse unit being that amount of neurotoxin, which when injected intraperitoneally into a white mouse weighing twenty-four grams, will kill the animal within twenty-four hours. The initial dose should never exceed five mouse units and will determine whether or not the patient is sensitive, refractory or responsive. Idiosyncrasy to cobra venom, which occurs but rarely, is manifested within forty to sixty minutes by drowsiness, restlessness, nausea, palpitation, erythema and pain at the site of injection and, in some instances, a mild diarrhea. If these symptoms appear, no further injections should be given. There has not been a single unfavorable response in the

entire series reported by the writer and but one case proved refractory; i-e no relief from pain after the third injection. The toxicity of cobra venom is not great when compared with its therapeutic efficiency and its continued use, unlike the narcotics, does not lead to habituation.

COBRA VENOM IN SURGERY

The knowledge that cobra neurotoxin produces a slow but prolonged analgesia and possesses a factor of safety equal to or surpassing that of morphine, dilaudid, pantopon or codeine without the hazard of addiction, prompted its substitution for the narcotics in the pre and postoperative management of thirty elective surgical cases, representative of the type of operative work encountered by the general surgeon in his daily hospital practice.

In sixteen major procedures (Group I) intramuscular injections of cobra venom were begun seventy-two hours prior to the day of operation and in fourteen cases (Group II) it was started on the day preceding surgery. Injections were carried out on the operative day and for two days thereafter (Tables I and II). In Group I, eight of the sixteen patients required supplemental narcotic analgesia for

Table I

DOSAGE OF COBRA VENOM

Administered to Each Patient in Group I

Days Preoperative	Mouse Units of Neurotoxin
3	5
2	10
1	10
Day of Operation	
(Pre-anesthetic med. HMC No. 1)	
5 hours after surgery	10
Days Postoperative	
1	10
2	5
Total	50

Group I (Adults)

ELECTIVE OPERATIONS

No of Cases	Operation	Indications	Anesthetic	Morphine	Total
8	Hysterectomies	1. Fibroid uterus	Ether	1/6 1/6	1/3
		2. Fibromyomas	Ether	1/8 1/8 1/8 3/8	
		3. Procidencia	Ether	1/6 1/6 1/6 1/2	
		4. Subinvolved uterus	Spinal		
		5. Multiple uterine fibroids	Ether		
		6. Submucous fibroid	Spinal		
		7. Fibroid with hypertrophic endometritis	Spinal		
4	Herniotomies	8. Intramural fibroids	Spinal	1/4 1/4	1/2
		1. Right indirect inguinal	Spinal		
		2. Left indirect inguinal	Spinal		
		3. Right indirect inguinal (testicle removed)	Spinal		
1	Cesarean Section	4. Umbilical	Spinal	1/6 1/6	1/3
2	Thyroidectomies	Previous pelvic fracture	Ether	1/8 1/8	1/4
		1. Non-toxic nodular goiter	Local		
		2. Thyroiditis (non-toxic)	Local	1/6 1/6	1/3
1	Cholecystectomy	Gall stones	Ether	1/8 1/8 1/4 1/2	

pain or discomfort (exclusive of pre-anesthetic medication) and the largest aggregate dose of opiate administered to any single patient postoperatively, was morphine grains one-half.

Ten of the fourteen patients in Group II needed opiates for the control of pain during the first forty-eight hours, following surgery and the total narcotics given to any one patient postoperatively, was pantopon grains two-thirds.

Group III, representing eight surgical emergencies, was given routine injections of venom but in increased doses. Injections of five mouse units were given on admission; ten mouse units six hours postoperative, and ten mouse units twelve hours later. (Table II.) A maximum of thirty mouse units was not exceeded in any twenty-four hour period. Each of these patients requested opiates for the relief of pain during the first forty-eight hours, but in three cases, less than one-half the amount of dilaudid usually given was found necessary. A patient with a perforated gastric ulcer received a total of three-twentieths grains of dilaudid and one-third grain of morphine the first three postoperative days.

The narcotic requirement in all three groups depended upon the individual's sensitivity to pain, the type of operation performed, whether or not local or generalized peritonitis existed at the time of surgical

Table III

DOSAGE OF COBRA VENOM	
Administered to Each Patient in Group III	
Days Preoperative	Mouse Units of Neurotoxin
Upon admission	5
(Pre-anesthetic med. HMC No. 2)	
6 hours postoperative	10
12 hours postoperative	10
Days Postoperative	
1	10
2	10
3	5
Total	50 In 4 days

Group III (Adults)
EMERGENCY OPERATIONS

No. of Cases	Operation	Indications	Anesthetic	Dilaudid	Morphine	Total
2	Salpingectomies	1. Ectopic pregnancy 2. Tubal pregnancy	Spinal	1/20 1/20 1/20 1/20	1/20	3/20 3/20
1	Purse-string suture	Perforated gastric ulcer	Ether	1/20 1/20 1/20	1/6 1/6	3/20 1/3mo
1	Oophorectomy	Torsion of ovarian cyst	Spinal	1/20 1/20		1/10
1	Repair of Hernia (bowel not resected)	Strangulated hernia	Spinal	1/20 1/20		1/10
3	Appendectomies	1. Acute gangrenous closure with drainage. 2. Acute catarrhal closure without drainage. 3. Acute obstructive closure with-out drainage.	Ether Spinal Spinal	1/20 1/20 1/20 1/20 1/20 1/20	1/20	1/5 1/10 1/5

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Table II

DOSAGE OF COBRA VENOM	
Administered to Each Patient in Group II	
Days Preoperative	Mouse Units of Neurotoxin
Upon admission	5
3 to 6 hours later	5
Day of Operation	
(Pre-anesthetic med. HMC No. 1)	
5 hours after surgery	5
10 hours after surgery	10
Days Postoperative	
1	10
2	5
3	5
Total	45 In 5 days

Group II (Adults)
ELECTIVE OPERATIONS

No. of Cases	Operation	Indications	Anesthetic	Pantopon	Total
1	Thyroidectomy	Non-toxic fetal adenoma	Local	1/3	1/3
2	Cholecystectomies	1. Gall stones 2. Previous surgical drainage	Ether Ether	1/3 1/3 1/3 1/3	2/3 2/3
2	Herniotomies	Indirect Inguinal Indirect Inguinal	Spinal Spinal		
3	Uterine suspensions	1. Retroversion 2. Retroflexion 3. Retrodisplacement	Spinal Ether Spinal	1/3	1/3
1	Perineorrhaphy	Cystocele and rectocele	Spinal		
1	Colostomy	Cancer of rectum	Spinal		
4	Salpingectomies (bilateral)	Pyosalpinx (gonorrheal) Pyosalpinx (gonorrheal) Pyosalpinx (gonorrheal) Pyosalpinx (gonorrheal)	Ether Ether Spinal Spinal	1/3 1/3 1/3 1/3 1/3 1/3	2/3 2/3 1/3 1/3

intervention and the extent of surgical trauma to which the patient was subjected.

Abdominal operations ordinarily attended by considerable pain due to postoperative distention consequent to intestinal manipulation, peritonitis or the use of restraining pads, necessitated injections of narcotics every four hours in order to make the patient comfortable, but when cobra venom was employed without, or in conjunction with morphine, pantopon or dilaudid, the total dosage and the number of injections of the opiates were greatly reduced. Morphine, in particular, when given in quantities insufficient to control pain, increased visceral tone and stimulated intestinal peristalsis but, in the past, when used in frequent effective doses, acted as a paralyzant and predisposed to the development of an adynamic ileus.

Cobra venom exerted no unfavorable action on the bowel and paralytic ileus was not experienced in any of the abdominal operations reported.

CONTRAINDICATIONS TO THE USE OF COBRA VENOM

1. Cardiopathies with decompensation.
2. Aortitis.
3. Sensitivity (rare).

4. Refractory cases i-e—those failing to improve after two or three injections.

5. It is considered incompatible with the administration of iodine, silver salts and radioactive substances. (Chopra and Chowhan^{12,13,14})

DISCUSSION

Cobra neurotoxin when given to thirty-eight surgical patients in doses recommended by the author, assisted materially in the relief of post-operative pain and discomfort. The full effect of the venom was manifested forty-eight to seventy-two hours after its use in cases prepared two or three days before surgery. Increased dosage on the day of operation proved effective inasmuch as fewer narcotic injections were required. The venom is synergic with the opiates and enhances their analgesic properties without making the patient utterly stupid or comatose. As a whole, those patients who received injections of venom were brighter, slept better, suffered less from gas pains and retained better appetites than those who had been narcotized for two or three days following surgery.

Cobra neurotoxin has an accumulative action which lasts several days after injections are discontinued, thereby extending the period of post-operative analgesia. Its recipient does not complain of blurred vision.

SUMMARY

Cobra venom was given to sixteen patients three days preoperatively, to fourteen patients one day prior to surgery and to eight patients on the day of operation. In all three groups the injections were continued for two to three days postoperatively.

In Group I—Eight of the sixteen patients needed narcotics for the relief of pain.

In Group II—Ten of the fourteen patients required supplemental narcotic analgesia.

In Group III—Each of the eight cases were given opiates for the control of pain but, in three instances, the dosage needed was approximately one-half the amount usually given.

CONCLUSIONS

1. Cobra venom, although slower in its action than the narcotics, produces a sustained analgesia after the third or fourth injection.

2. It is synergistic with morphine, dilaudid and pantopon in relieving pain.

3. It does not inhibit intestinal peristalsis or narrow the field of vision.

4. It is not habit forming and does not depress the patient—on the contrary it improves the psyche and stimulates the appetite.

TABLE COMPARING PHYSIOLOGICAL RESPONSE TO MORPHINE AND COBRA VENOM

	Morphine Opium alkaloid	Cobra Venom Related to the carbohydrates. Central (affects only the pain and respiratory centers).
Chemistry.....	Opium alkaloid	
Action.....	Central (depresses entire cerebral cortex affecting all special senses)	Central (affects only the pain and respiratory centers).
Effect.....	Rapid.	Slow and cumulative.
Psyche.....	Depressed.	Improved, action similar to therapeutic doses of caffeine.
Field of vision.....	Narrowed, pupils constricted.	Widened, pupils normal or slightly dilated.
Acuity of hearing.....	Blunted.	Sharpened.
Sense of smell.....	Diminished.	Intensified.
Mental efficiency.....	Decreased.	Increased.
Appetite.....	Decreased.	Stimulated.
Liver and kidney functions.....	Possibly impaired.	Not affected.
Blood pressure.....	Lowered.	Temporarily elevated 5 to 6 points systolic.
Intestinal peristalsis.....	Small doses, stimulate. Large doses, paralyze.	Not affected.
Margin of safety.....	Wide.	Wide.
Effect on fetus prior to cesarean section.....	Narcotizes and asphyxiates if given less than 4 hours before operation.	None.
Glandular secretory function.....	Inhibited.	Not effected.
Dosage (surgical).....	1/8 gr. to 1/2 gr. q 3 or 4 hours.	5 to 10 mouse units, 2 or 3 times a day for four or five days. 35 mouse units maximum dose for any 24 hour period.
Habit forming.....	YES.	NO.

5. It is safe and highly effective when given in therapeutic doses.

6. The writer believes that cobra venom is a valuable addition to the armamentarium of drugs used by the surgeon in his office and hospital practice.

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Note: The cobra venom used in this study was generously supplied through the courtesy of Hynson, Westcott, and Dunning, Baltimore, Maryland.

THE EFFECT OF ANESTHETICS UPON THE LIVER

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Study of the action of anesthetics upon the liver began with chloroform, for this drug, besides being one of the earliest anesthetics, is one of the most dramatic in its effect on the liver. It is difficult to place the credit for discovery of this side action of chloroform, since the symptoms of the poisoning were at first attributed to acidosis and dismissed as such. Casper¹ in 1850 expressed the belief that chloroform might leave behind it a state of chronic poisoning which might terminate fatally hours, days, or even weeks after its administration, and he was perhaps the first to direct attention to this condition. In the same year Langenbeck¹ reported a death from supposed delayed chloroform poisoning seventeen hours after operation. Gradually the number of reports of deaths following chloroform anesthesia increased. At autopsy the most common finding was fatty change in the liver, heart or kidneys, or in all of these organs.

Leonard Guthrie¹ published in 1894 records of ten cases occurring in children, emphasizing that in at least five of these cases the liver was very fatty. He felt that the fatty liver was a predisposing factor and not a result. Sollmann² credits Bevan and Favill with the first recognition of the nature of late chloroform intoxication.

The symptoms of this condition are in order of appearance: copious coffee ground vomiting, jaundice appearing on the second day after the vomiting, increasing drowsiness with onset of coma on the third or fourth day, and hyperpyrexia during the last twenty-four hours.³ La Rocque⁴ quotes Benard's classification of the types of chloroform poisoning: 1. Serious (a) nervous type, marked by convulsions, delirium, vomiting and oliguria with bile pigments, urobilin and albumin in the urine; (b) icteric type, in which jaundice is the principal feature, with the above symptoms appearing at the end. 2. Mild, with less alarming symptoms and resolution in a few days. Jaundice is not constant and indeed some authors claim that it is not common. Convulsions occur in about one-half of the cases. The liver is usually palpable and tender.

At autopsy in these cases the liver is usually flabby and the parenchyma extremely soft. The cut surface

has a yellowish tinge, probably due to staining with bilirubin.² Microscopically the cells are markedly necrotic, the necrosis beginning at the center of the lobule and extending more or less toward the periphery. Fat is usually deposited most heavily in the mid-zonal region, seldom in the central necrotic part of the lobules. These microscopic lesions cannot be demonstrated in less than six hours. They reach their maximum in forty-eight hours.

The histological changes reflect impairment of function as measured by the dye tests. Eight days are required for bromsulphalein excretion to return to normal after one-half hour of chloroform anesthesia. Administration of chloroform for two hours causes a decrease in dye excretion which returns to normal in about six weeks.

The liver shows damage by other tests also after chloroform anesthesia. After administration of chloroform to dogs for one-half hour, Sanford, Rosenthal and Bourne⁵ found bilirubinemia and urobilinogenuria lasting for three days. Following two hours of chloroform anesthesia, the icteric index rose to eleven units on the next day and required ten days to return to normal. The urobilinogen dilution index rose under these circumstances from a normal value of five to one hundred on the following day, and returned to normal only after ten days.

Other effects of chloroform which are interpreted as resulting from liver damage are increased urea in the blood and urine⁶, decreased excretion of bile salts¹, increase in blood lipase, decrease in galactose and levulose tolerance⁶, decrease in blood fibrinogen⁷, increased blood cholesterol, and hyperglycemia.

Decrease in blood fibrinogen is generally accepted as a concomitant of liver injury, and in chloroform poisoning the two conditions show a remarkable parallelism of degree.

The cholesteraemia and increase in blood lipase are undoubtedly related, although the mechanism of their production is not generally agreed upon. In fact, there is great variation as to the reported time of onset of the rise in blood cholesterol and its amount. Bloor⁸ found an immediate rise only if the dog had been previously stuffed with fat, but he noted an after-rise two or three days later. Mahler⁸ found the rise to be as much as 300 per cent. Hospers⁸ found a gradual but continuous rise in blood cholesterol with continuous chloroform anesthesia. Succheschi and Manceau⁸ found a slight rise. Reicher⁸ reported a great increase. Ghose⁹ observed slight but definite rise in blood cholesterol during chloroform anesthesia in rabbits, and a marked increase when the animals were killed by an overdose of the anesthetic.

From his work on pigeons Datta¹⁰ concludes that

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probably this increase of blood cholesterol may be ascribed to mobilization of reserve fat, Hospers⁸ seeks an explanation in the toxic degeneration of the liver cells, with liberation of lipoid substances.

According to Hospers⁸ the hyperglycemia which accompanies chloroform poisoning is explainable on the basis of excitement. Most authors, however, feel that this hyperglycemia is in some way related to liver damage. Ravdin et al¹¹ attribute it to action of the anesthetic upon the liver cells, making them unable to store glycogen. These workers found no exact parallelism between the amount of glycogen lost from the liver over a period of time and the rise of blood sugar during the same period. They state that ninety-four per cent of the liver glycogen has been lost twenty-four hours after anesthetization with chloroform.

There is no entirely satisfactory hypothesis to explain the toxic action of chloroform upon liver cells. Paton¹² suggests fixation of the anesthetic by the cells, the degree of fixation depending on the vascularity of the tissue and its lipoid content, together with the fact that chloroform checks and finally stops the processes of oxidation in the cells. Fischler¹³ explained the changes in the liver on the basis of associated fat necrosis produced by injury to the pancreas. Wells¹³ expressed the view that the lesions of late chloroform poisoning arise because, although the oxidizing enzymes are suppressed, the autolytic enzymes are left free to digest the cells. Muller¹³ ascribed the changes to the production of phosgene. Graham¹³ points out that this substance, if formed in the body would almost certainly be hydrolyzed to HCl and CO₂. Graham was able to produce, by administration of HCl in suitable concentration, all the changes characteristic of late chloroform poisoning except that the necrosis was peripheral rather than central. He stated that the necrosis-producing powers of CH₂Cl₂, CHCl₃ and CCl₄ parallel the amount of HCl which these substances can theoretically yield in their breakdown, whereas ether and chloral hydrate do not liberate HCl and do not cause liver necrosis. One of the earlier theories was that the liver necrosis of chloroform intoxication was due to disturbance of cell oxidation, but Davis¹⁴ found no relation between the liver damage and normal tissue oxidation and was not able to protect animals against chloroform liver injury by intravenous injection of organic oxidizing agents. LaRocque³ mentions the opinion of Quenu and Kuss, and of Gilbert, Chabrol and Weill that icterus following chloroform anesthesia may be hemolytic in origin rather than hepatic.

In an attempt to make a direct attack upon the problem of liver damage and repair Schultz, Hall

and Baker¹⁵ injected chloroform into the portal system. The necrosis thus produced was central in distribution. There was remarkable mobilization of macrophages from the second to the fifth day, with fibroblasts coming in about the fourth day. From one to three weeks were required for organization of the necrotic tissue, depending upon the size of the lesion. Repair may be complete. When fibrosis occurs it is mostly periportal and peribular. The liver cells are especially rich in glycogen between the first and fourth weeks of repair. Clotting capacity of the blood was definitely decreased at first, but during the later stages of repair clotting was unusually rapid.

If regeneration of liver cells is normal there occurs no acquired resistance to subsequent use of chloroform, but MacNider¹⁶ reported that when repair is effected by cords of flattened atypical cells, which may remain syncytial and which may or may not excrete phenoltetrachlorophthalein normally, then the liver fails to show necrosis and dye excretion is normal after administration of chloroform for three hours. But if, under these conditions, chloroform be given for four hours at one time or for three hours on two successive days, then these atypical cells show modified central injury, proving that their resistance is only relative.

According to LaRocque³ there is no clinical history of a case of hepatic lesions produced by ether, but such lesions occur as frequently as with chloroform. The lack of case reports suggests that the lesions are less extensive and less severe. Goldschmidt et al¹⁷ did not produce liver necrosis in either dogs or monkeys with diethyl ether under the conditions of their experiments.

Mahler is quoted by Hospers⁸ as having found that in man ether anesthesia produces a continuous rise in blood cholesterol proportional to the duration of anesthesia. Ether usually completely depresses the secretion of bile in laboratory animals during anesthesia, and diminishes the response to chologogues⁶. According to Rosenthal and Bourne⁵ there are no abnormalities of urobilinogen excretion and no increase in blood bilirubin during ether anesthesia. They state that at the end of two hours of ether anesthesia there is fourteen per cent dye retention, which returns to normal by the next day. Whipple and Speed¹⁸ observed interference with phenoltetrachlorophthalein excretion lasting for twenty-four hours after two hours of full ether anesthesia. This impairment of function is not, however, of a degree to compare with that produced by chloroform.

Evans, Tsai and Young¹⁹ found that in normal cats six minutes of etherization reduced the liver

glycogen to seventy-four per cent of its original value and that the liver glycogen reached its minimum (at about forty per cent of the original content) after one hour of ether anesthesia. They believe that this effect is probably due to liberation of adrenaline, since the fall is minimal after inactivation of the adrenals, but they admit the possibility of a direct effect of the anesthetic on the liver cells. Mann is quoted by Coleman²⁰ as having observed that ether causes hyperglycemia dependent wholly upon the liver. Ross and Davis²¹ expresses the opinion that hyperglycemia in dogs under ether anesthesia is due to direct suppression of insulin by ether and Hospers⁸ states that insulin prevents the rise of both sugar and cholesterol in the blood during anesthesia. Phillips and Freeman²² report that elevation of blood-sugar level in cats under ether is considerably reduced by inactivation of the adrenals but does not disappear in the completely sympathectomized cat, suggesting that the hyperglycemia does not depend entirely on adrenal stimulation.

Vinyl ether or vinethene was administered to normal dogs by Bourne and Raginsky²³ for one hour or more on three successive days and no appreciable change in liver function was seen. Repetition of vinethene for one hour on successive days did not alter the speed of recovery from chloroform poisoning. Goldschmidt, Ravdin and Lucke²⁴ were not able to recognize changes in livers of dogs given vinethene by open drop or by CO₂ absorption. When vinyl ether volatilized with air was given for three hours thirty-two per cent of the dogs had normal livers four days later, and twenty-eight per cent showed extensive necrosis. Leake, Knoefel and Guedel²⁵ found no gross changes in livers of dogs killed under vinyl ether anesthesia, even after repeated administration of the drug on successive days. Goldschmidt and his coworkers¹⁷ were unable to produce liver necrosis in the monkey with vinyl ether, even after starvation. In dogs they found no necrosis after an hour of vinethene anesthesia. Ten per cent of the dogs showed necrosis after two hours of vinethene, and thirty per cent showed necrosis after three hours anesthesia. This necrosis was of the same type as that produced by chloroform. The same authors ligated the extrahepatic bile ducts and removed the gall bladders of three dogs. Two weeks later the dogs were given vinyl ether for one hour, during which time the liver was biopsied. When the liver was examined three days after vinyl ether anesthesia it was found not to be significantly altered, suggesting that vinethene does not harm the previously damaged liver.

According to Raginsky and Bourne²⁶ the action of avertin on the normal liver is about the same as

that of ether, repeated administrations in dogs producing only mild parenchymatous degeneration of the liver and kidneys, with occasional fatty changes. These authors state, however, that with a given dose of avertin the anesthesia is deeper and lasts longer in dogs with impaired livers than in normal dogs. Avertin given to dogs poisoned by chloroform shows five to thirty per cent additional injury, varying with the severity of the original degeneration. The additional damage disappears within twenty-four to forty-eight hours, and recovery from the chloroform poisoning is not deterred. On the other hand, Coleman²⁰ states that seventy-seven per cent of thirteen patients receiving avertin anesthesia showed impaired liver function as noted by dye retention, and recovery of liver function was slower than with other agents. Avertin leads to marked stimulation of bile flow in the dog, during which the absolute amount of bilirubin secreted is unchanged, and the concentration is decreased. This bile flow is not influenced by insulin, atropine, epinephrine, reticuloendothelial blockage, or by administration of glucose orally. It is, therefore, the result of direct action of the anesthetic on the liver cells⁶.

McKim and Bourne²⁷ report the administration of avertin to one patient twenty-four times for changing dressings. After the twenty-first anesthesia there was ten per cent dye retention, and after the twenty-second time there was five per cent retention. The blood sugar time curves taken after each administration of avertin showed disturbance of carbohydrate metabolism, which the authors attribute to the presence of infection and toxemia rather than to the action of the anesthetic.

Greeley²⁸ records a case of death following the administration of eighty mgm. of avertin per kg. supplemented with nitrous oxide-oxygen for appendectomy. The patient was a white female twenty-three years old. Ten hours after operation she complained of pruritus. Vomiting began several hours later. After seventeen hours the vomitus had assumed a coffee ground appearance and the patient was complaining of abdominal pain although apparently not distended. The temperature was 101 degrees on the morning after operation, and rose to 109¹ within twelve hours. Thirty-six hours after operation the systolic pressure was seventy. At this time one liter of bile was removed from the stomach. The patient died at the end of forty-four hours. Greeley mentions Pribram's case who died forty-eight hours after cholecystectomy for which avertin was given as a basal anesthesia. She did not recover consciousness, developed total anuria, and at autopsy showed fresh injury to the liver and old arterio-sclerotic kidneys. In the same article is de-

scribed Kallman's case of death from avertin in which autopsy revealed fatty degeneration of the liver and acute nephrosis.

Raginsky and Bourne²⁹ gave cyclopropane to a normal dog for one hour daily for nine days, testing dye excretion. Twenty-four hours after the first and third administrations there was ten per cent dye retention, no retention on the other days. At autopsy on the tenth day the liver appeared normal grossly. Microscopically there was moderate dilatation of the intercolumnar capillaries and edema of the parenchyma most noticeable about the central veins, but no fatty change was seen. Another normal dog was given cyclopropane for one hour on two successive days, for three hours on the third day. It showed no dye retention on the fourth day. At that time the dog was given one-half hour cyclopropane anesthesia. On succeeding days dye retention was eighty per cent, ninety per cent, fifty per cent, and ten per cent. Cyclopropane did not prevent recovery of a liver which had been previously damaged with chloroform. Results with cyclopropane after starvation were inconclusive.

Using nitrous oxide-oxygen Coleman²⁰ found dye retention on the first postoperative day in one-third of twenty-seven patients. Excretion returned to normal by the eleventh day. This author quotes LaRocque's statement that nitrous oxide is the only anesthetic which does not damage the liver cells. According to Rosenthal and Bourne⁵ anesthesia with nitrous oxide and ethylene for one to two hours without cyanosis does not result in demonstrable impairment of liver function. LaRocque states that among patients given nitrous oxide alone, only twenty per cent retained any traces of urobilin in the urine for more than five days. When nitrous oxide was given but no surgery was done, no urobilin or bile pigments appeared in the urine. Hospers⁸ found that fluctuations in blood cholesterol with nitrous oxide and ethylene are of the same magnitude as those produced by excitement. A significant fact is that these fluctuations are decreased when morphine is given as premedication. Ethylene and nitrous oxide are accompanied by hyperglycemia which Hospers also attributes to excitement. Browne and Evans³⁰ observed a rise in blood sugar under nitrous oxide, although not so great as with ether. There is also a rise in blood lactate. They state that "no doubt the oxygen lack, together, perhaps, with some direct effect of nitrous oxide, acts on the central nervous system, and that the rise of lactate, like the rise of sugar, is due largely to a discharge of adrenaline into the blood seems most probable." When cats were decapitated under nitrous oxide the rise in blood sugar and lactic acid

was much greater than with the anesthetic alone.

Sollmann⁴ states that alterations in liver function produced by toxic doses of the barbiturates resemble those occasioned by infectious diseases. According to Beecher⁶ there is no delayed damage with amytal, and immediate damage occurs only in a few cases. Bidwell, Shillito and Turner³¹ found no significant change in total serum cholesterol after nembutal was given to dogs in amounts sufficient to produce deep narcosis lasting several hours. Ginesty is quoted by Hospers⁸ as having found the blood cholesterol lowered after barbital anesthesia. Murphy and Young³² observed a progressive rise in blood sugar under luminal for 270 minutes, after which it fell, although the liver glycogen fell continuously throughout. They suggest that in view of the evidence indicating that amytal inhibits the parasympathetic system, it is possible that amytal acts to decrease liver glycogen by preventing glycogenesis. According to Evans, Tsai and Young¹⁹ amytal removes about one-half the liver glycogen in cats in two hours. Dial reduced the liver glycogen to about one-tenth the initial value in five hours. These authors mention the opinion of Hines, Leese and Barer that storage of glycogen from glucose is inhibited by amytal. This barbiturate is said by Zorn and her coworkers³³ to be the most effective of the series in inhibiting oxygen uptake in slices of rat liver. Barbital was the least effective. Reynolds³⁴ mentions finding areas of focal necrosis in the livers of white mice treated with pentothal.

Whipple and Speed state that paraldehyde, chloral and urethane in amounts sufficient to produce stupor usually cause a drop in phthalein excretion for twenty-four hours. When alcohol is administered over long periods to dogs, a certain number show an increase in excretion of phenolsulphonphthalein. Withdrawal of alcohol results in a decrease in elimination of this dye. The increase is believed to be due to failure of the injured liver to destroy part of the dye, which is then available for renal elimination. Sections taken from the liver at the time of this increase show cloudy swelling and marked edema of the outer cells of the lobules. The nuclei of these cells are smaller and stain faintly. The cytoplasm shows a variable amount of stainable lipid. The same change is seen in acute intoxication of twelve hours duration. By the end of three days the edema is largely disappearing, with an improvement in the staining of the nuclei and decrease in the amount of stainable lipid. Recovery begins near the central vein and progresses toward the periphery. Intoxication for twenty-four hours results in more extensive edema, and the liver is greatly enlarged and grayish-white. On the third day the

edema is decreased and at the twelfth day there is no histological evidence of liver injury³⁵.

For the sake of completeness Herzberg's³⁶ work on dogs killed with trichlorethylene may be mentioned. One dog showed extensive fatty infiltration, principally near the portal veins. In another all the liver cells were swollen and vacuolated although the cells membranes were clear and sharp. In the third there was a marked tendency to vacuolation and small scattered areas of fatty infiltration. Since similar changes occur in normal dogs the author attributes them to normal digestive and metabolic processes.

The effect of anoxia on the liver should be described because of its inseparability from anesthesia. Beecher⁶ states that neither ethylene nor nitrous oxide produced any impairment of hepatic function in dogs, but that in the presence of anoxemia both immediate and delayed toxic effects follow. Rosenthal and Bourne⁵ gave nitrous oxide and ethylene in a closed glass chamber under forty to sixty mm. pressure with intermittent oxygen, and found an immediate impairment of liver function which required several days for recovery. They also found that damage from either was much increased by asphyxia during anesthesia. Goldschmidt, Ravdin and Lucke²⁴ were able to decrease chloroform liver damage by fifty per cent by volatilizing the chloroform with oxygen instead of air. When ether was volatilized with a mixture of fifteen per cent oxygen and eighty-five per cent nitrogen instead of with air, liver injury was increased by sixteen per cent¹¹. Ravdin et al¹¹ state that volatilizing chloroform with oxygen had no sparing effect on liver glycogen, but leads to more rapid restoration of liver glycogen concentration after anesthesia.

In view of evidence given in the preceding paragraph it seems hardly necessary to say that adequate oxygen intake during anesthesia is of prime importance in preventing liver damage. Because of the inverse relationship between liver glycogen and blood sugar following anesthesia it is fairly common practice to feed glucose preoperatively and to give it intravenously postoperatively, especially if the liver is already damaged. There is no doubt that this practice affords the liver some protection. The experiments of Goldschmidt, Ravdin and Lucke²⁴ are typical of those which prove this point.

More recently Miller and Whipple⁷ have shown that liver injury by chloroform increases as the protein stores of the body are depleted and suggest that the protective action of glucose may be due to its protein-sparing activity. Neale³⁷ and Neale and Winter³⁸ experimented with the purines as protective agents and found that best protection was ob-

tained in rats by giving sodium xanthine 100 mg. subcutaneously forty-eight hours before anesthesia and repeating twenty-four hours before anesthesia. Under these circumstances the livers of the rats showed only a few intracellular fibroblasts after two hours of deep chloroform anesthesia.

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(Continued on Page 304)

President's Page

To the Members of The Kansas Medical Society:

In this issue of the Journal appears the personnel of the various committees with their designated chairmen. May we assure them the heartiest cooperation in the performance of their duties, at times arduous and not too pleasant, at other times of great interest and filled with pleasure in their performance.

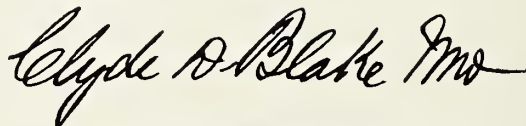
At this time may I state for this group of workers and for myself, your President, that timely suggestions and constructive criticism will always be helpful and assuredly welcome. As our work develops it will be noted some new arrangements in committee function will be suggested which it is hoped will facilitate and render less irksome some of the tasks of certain committees that have heretofore been almost prohibitive in time consuming detail.

For the chairmen of the various committees, may we begin now to thoughtfully survey the fields of our committee activities and be ready for reasonably early meetings to coordinate our work, and from the maze of material at hand, select certain objectives which seem most desirable of attainment for the ensuing year.

May I here note the great pleasure in meeting with the program committee in Wichita recently. The inclusion in this group of the several adjacent counties to assist with the work, while an innovation in our arrangements, already seems apparent of great value in lightening the burden imposed usually in its entirety on the host city.

Again may I express my appreciation for the wonderful cooperation of my official associates, and the universal response of the designated chairmen and committee personnel.

Sincerely,

A handwritten signature in cursive script, reading "Clyde O. Blake Jr". The signature is fluid and elegant, with a prominent initial "C" and a stylized "Jr" at the end.

President, The Kansas Medical Society.

EDITORIAL

COMMITTEES

As will be noted on page 304 of this issue, Dr. Clyde D. Blake of Hays, President, has announced the new Society committees which will serve during the year of 1941-42.

Committee work has become one of the foremost activities of the Society. Each of the twenty-eight standing and special committees handle numerous projects of importance to public health and medicine and collectively the committees work upon almost every problem or question on these subjects which are known or of present interest.

Dr. Blake contemplates placing in effect what appears to be a very efficient plan of organization for this year's committee work. The usual conference of committee chairmen is to be held in the near future, at which projects and activities will be assigned to the various committees. Immediately thereafter, each chairman will be asked to call a meeting of his committee for discussion of projects, for decision as to their approval or rejection, and for determination of ways and means in which they may be executed. Upon completion of this work, the projects will be further assigned individually to the members of the committees and each of these members will be asked to assume responsibility for completing the project delegated to him. In other words, that generally speaking under this plan it will be possible to accomplish and prepare studies upon as many projects as there are members of committees.

Dr. Blake is also to be congratulated upon the excellent distribution and arrangement of his committee appointments. The 261 physicians appointed to committees thoroughly represent every area of the state. Likewise, each county medical society has at least one member serving upon a committee.

LOCATIONS

The statement is frequently heard that medical graduates are no longer willing to locate in smaller communities and that as a result those communities experience a problem in obtaining replacements of their medical facilities.

With the thought in mind of determining the accuracy or inaccuracy of this allegation, Dr. J. F. Hassig, of Kansas City, Secretary of the Kansas State Board of Medical Registration and Examination, recently completed a survey showing the sizes of the towns in which doctors of medicine, entering practice in this state, have located during the past ten years. This study is reproduced below:

Year	TOWNS									
	Under 1000	1000 to 2000	2000 to 3000	3000 to 4000	4000 to 5000	5000 to 10030	10000 to 15000	15000 to 20000	20000 to 30000	30000 to 125000
1930	8	5	6	4	1	3	5	1	4	6
1931	4	4	5	1	0	5	8	7	1	11
1932	7	7	1	3	2	7	7	1	2	13
1933	5	4	0	4	6	1	10	2	2	7
1934	8	5	6	2	0	2	8	0	2	17
1935	5	4	4	3	4	7	7	3	2	20
1936	10	7	1	3	4	7	7	1	2	21
1937	4	9	5	3	2	4	9	0	1	21
1938	8	8	4	1	3	3	13	2	1	19
1939	5	4	1	0	3	1	7	4	3	34
Total	64	57	34	24	25	40	81	21	20	169

It would seem that the study supplies a rather accurate answer to the above question, inasmuch as the years included are recent years, as they are probably sufficient in number to furnish a good indication, and as they represent the major depression years. If this is correct, it is self evident that the statement is inaccurate insofar as this State is concerned. It will be seen that more than one-half of the physicians who have located in Kansas during the ten-year period have chosen locations in the smaller communities, and when equal division and distribution of population groups are considered along with the fact that the larger communities in this State have a majority of the State's population, it is clear that the smaller towns have had even a more favorable situation than the larger towns.

Of further interest in this connection is the fact that Kansas has no county which is not served by a doctor of medicine; that it has no areas which are more than thirty or thirty-five miles from a hospital; that the overwhelming majority of its areas are ten or fifteen miles or less distance from a hospital; that it has almost the national average of population per physician; and that its age groups of physicians and its specialists are well distributed throughout the State.

MEDICAL ECONOMICS

INDIGENT MEDICAL PLAN

Mr. C. J. Morgan*

Seneca, Kansas

In 1932 there were a few families receiving assistance from the county. There were undoubtedly more that received assistance from the townships and from organizations. This number has increased constantly since that time bringing with it problems of many kinds among which was that of providing medical care. In the beginning, the county commissioner or township trustee authorized what little medical care was financed by the county and with the establishment of the welfare program, this authority was given to the poor commissioner; whose title was later changed to the county director. The county director, having little or no medical knowledge, was placed in the position of determining who should have medical care and who should not. The increasing costs of medical care, questions of hospitalization within the county, and a lack of uniformity in fees were some of the problems to be faced.

The clients had their problems such as the difficulty of getting authorization for medical care and the constant necessity of going to the welfare office before going to the doctor and then going back to the welfare office before knowing if they were going to be assisted by the county, or allowed the medicine the doctor had prescribed.

The physicians also had problems such as getting authorization previous to giving care unless the case was an emergency and if it was an emergency, and treatment given first, the difficulty of getting the bill allowed; there were also difficulties in getting in touch with persons who could authorize, in having to make reductions with no plans for such, and the problem of knowing what to charge.

The physicians realizing there must be some method of control of expenditures and the Board of Social Welfare realizing the lack of knowledge and training of the personnel of the welfare agency in regard to medical matters decided to work out a plan that would give to each group the responsibility that should be theirs. The following plan was made and became effective on June 1, 1940.

AGREEMENT

It is hereby agreed by and between these members of the Nemaha County Medical Society, whose names

*County Director of the Board of Social Welfare of Nemaha County.

are subscribed hereto, parties of the first part, and the Board of County Commissioners of Nemaha County, Kansas, parties of the second part, as follows:

In consideration of the covenants and agreements herein contained on the part of, and of the payments to be made by the party of the second part, the said parties of the first part agree:

1. To furnish all necessary and usual medical and surgical care within the scope and ability of the participating physicians, bandages and dressings, drugs and medicines and hospitalization to the indigent persons of Nemaha County, Kansas, as is or may be required by law to be furnished by a county in the State of Kansas.

2. To give to the Nemaha County Welfare Director a statement for services and supplies furnished to each case, and to give to said County Welfare Director a written report by the twenty-fifth day of each month, for each such person receiving medical attention, to be included in the records of the person receiving assistance.

3. To give to the Nemaha County Welfare Director a list of all such persons who have personally paid the treating doctor or any parties of the first part, for his services to such person, with the amount paid, by the twentieth of each month.

4. To furnish parties of the second part a unit fee schedule to be incorporated as a part of this agreement to be used in making county orders for general assistance cases.

In consideration of the covenants and agreements of the parties of the first part, herein contained, the party of the second part agrees:

1. That first parties shall receive, for the services herein mentioned, and as full compensation therefor (except for care at the State Tubercular Sanatorium for which the first parties are not bound) the sum of \$825.00 per month payable as follows: \$2.00 a month to be allowed in the grant of, and to be paid in advance to, those recipients of Old Age Assistance, Aid to Dependent Children, and Aid to the Blind who desire to have such amount included in their respective grants and who desire to personally pay the same to any of the first parties by the twelfth of the month, and the balance of said sum (or the difference between the total amount paid by said recipients and said sum of \$825.00), to be paid to the representative of the parties of the first part on county orders on the Wednesday following the first Monday of each month.

2. To give the WPA employees the privilege of paying \$2.00 a month if they desire the above mentioned services, this to be considered as over and above the guaranteed \$825.00 a month, however if said WPA cases do not pay \$2.00 a month, they are to be given emergency medical care as required by law in the State of Kansas.

3. To give to the first parties by the first day of each month, a list of all persons who are eligible to receive assistance during such month specifying those who will be allowed and paid \$2.00 by the second party, including also a list of acceptable WPA cases.

4. To cooperate with parties of the first part in securing or attempting to secure free medical assistance and facilities from the State Board of Health and other agencies.

5. To promptly notify the secretary of the party of the first part of any complaint of any consequence concerning the operation of this plan.

It is further understood and agreed by and between the parties hereto that:

1. The term "indigent" persons, as herein used shall include those persons who comply with all of the provisions of this agreement and who receive Old Age Assistance, Aid to Dependent Children, Aid to the Blind, and General Assistance, and such other persons as may not be able to pay for medical care and to whom the county would be required by law to furnish medical care and assistance, and including also those persons on WPA and their families. Those persons who are not receiving some form of assistance shall be investigated by the Nemaha County Welfare Office and a certificate made relative to their eligibility.

2. The term "drugs and medicine" as used herein shall include all items prescribed by the attending physician or physicians to be used internally or externally by the patient.

3. Hospitalization shall be provided as and to the extent approved by the party of the first part attending physician and at those hospitals approved and recommended by parties of the first part, including hospitalization at the University of Kansas Hospital.

4. On the basis of reasonable distance and other reasonable circumstances, the indigent persons shall have a choice of doctors who are parties to this agreement and who desire to serve that particular person or family.

5. The indigent persons shall have a choice of hospitals that are on the list approved by the parties of the first part.

6. Any parties of the first part shall have the right to refuse or discontinue to treat any case in the same manner as in private practice; to require examination and treatment at designated places and hours; to have reasonable periods of time for appearance at necessary home calls; and to pursue other restrictions reasonably in accord with the conduct of their other practice.

7. The parties hereto will cooperate in controlling malingering.

8. The parties of the first party are severally bound thereby, but are not jointly bound as partners; that said parties of the first part have not become partners by reason of this agreement, and that the legal liability of each party hereto is strictly limited to his own individual acts.

9. That this contract may be terminated by a thirty day notice in writing by either party to a representative of the other party.

Signatures.....

The following are observations and facts obtained after the plan had been in operation for a period of six months.

It is agreed by both the physicians and the Board of Social Welfare that the responsibilities are now where they belong. No longer is there the confusion, uncertainty and delay that was caused by having to get authorization for medical care from the welfare office. The county is providing funds for the payment of services given as it should; however, there is still the problem of ample funds. The cost has increased 11.3 per cent under the present plan. The cost now amounts to approximately ten per cent of our budget. There are problems that both groups will have to work out in this respect and with the

needs for medical care and the limitation of funds, there will be this problem for a long time to come. The physicians have been more than cooperative and are doing all in their power to help the plan to succeed. The unit which they have received has varied considerably as indicated. The unit should be \$1.00 according to the rates charged county patients.

June (twenty days)	\$1.77
July .....	.37
August .....	.25
September .....	.51
October .....	.70
November .....	.51

The physicians have worked out agreements with the hospitals so that the charge for this service is quite low and the druggists have agreed to furnish medicine at cost plus fifteen per cent. The physicians pay the hospital bills, the drug bills, the secretary's salary, mileage charges and prorate the balance.

After six months of operation the plan has changed in one respect only and that is allowing \$2.50 per case for every case that receives assistance. This has increased the amount paid the physicians some, however, it is not sufficient to make it possible for them to receive a \$1.00 a unit. It was felt that due to the lack of funds and the need of adjustment of some problems within the group of physicians, no further change could be made at this time.

One feature is noticeable and it is the decrease in hospitalization during this time. In the six months the plan has been in operation, hospitalization has decreased thirty-four per cent. As far as we have been able to observe, the decrease is not made at the expense of our clients. In fact, it seems to us that there is a tendency to hospitalize in some instances where it might be avoided. There have been several cases of hospitalization and surgery in cases of old standing that were not assumed by the county under the old method. It appears there is some progress being made in the direction of persons being rehabilitated because of care received.

It is quite difficult for physicians to standardize their charges and also to keep the amount of drugs prescribed somewhat uniform. The following table shows the wide variation that existed during the six months the plan has been in operation.

Average Units Per Patient Per Doctor	Average Cost of Drugs Per Patient Per Doctor
1. A (surgeon).... 8.0	1. B .....\$4.07
2. B 6.5	2. I 2.24
3. C 4.1	3. E 1.71
4. D 3.8	4. K 1.40
5. E 3.0	5. F 1.08
6. F 2.6	6. A ..... .97
7. G 2.4	7. D ..... .97
8. H 2.3	8. J ..... .85

9. I	2.0	9. H .....	.72
10. J	1.9	10. C .....	.69
11. K	1.7	11. G .....	.63
12. L	1.6	12. N .....	.54
13. M	1.5	13. M .....	.53
14. N	1.5	14. L .....	.49

It is not the purpose of the above to cast any reflection on the physicians or druggists, however, it does indicate there is a wide variance in the methods of treatment of various physicians and indicates problems that will have to be worked out for the common benefit of all.

Another problem that has arisen as a result of the plan is the feeling among the physicians that the clients are asking for considerable unnecessary service. In the six months there was a 34.8 per cent increase in the number of cases eligible for medical care as compared with the same months before the plan was in effect and there was a 155.7 per cent increase in the number of persons receiving medical attention for the same period. The year prior, the opinion of those in the welfare office was that adequate medical care was given. This is due to the fact that any person who stated they were in need of medical care, cash allowances were made upon the recommendation of the physician and to the amount they thought necessary. There is some feeling that part of the increase is due to home visitors encouraging their clients to go to the doctors without regard to their need. The physicians realize that they too will have to help in controlling unnecessary calls.

The old age assistance cases contrary to our original belief are not receiving medical care out of proportion to the number eligible. The following table gives comparison of those eligible, those treated, and the cost of treatment.

	Per Cent of Cases by Categories Eligible for Medical Care	Per Cent of Cases by Categories Treated	Per Cent of Cost by Categories of Treatment
OAA	63.5	54.4	51.2
AB	1.8	2.6	3.1
ADC	9.3	10.4	8.9
GA	17.7	18.2	20.7
WPA	7.7	14.4	16.1
	100.0	100.0	100.0

Approximately sixteen per cent of the WPA cases are participating in the plan and it is seen that they are receiving more medical care in proportion to the number eligible than any other group. This figure might well be larger as during the time the worker has been laid off WPA if they have been paying, the payment is made for them as general assistance. A part of the group shown as general assistance are WPA families in which the head was not working.

The families do not seem to go from one doctor to another to any great extent as is shown below.

Patients Under the Care of More Than One Physician Per Cent of Patients	Number of Physicians
16.8	2
7.	3
0.85	4

In this county there are several specialists and a number of cases are naturally referred to them by other physicians. When looking at the above from the standpoint of the clients going from one physician to another without just cause, it does not present an accurate picture. It is difficult at this time to determine accurately how much unnecessary changing is being done.

There is a little difficulty in getting the persons who have had money included in their grant to pay the physicians. About six per cent of the categorical cases will not make payment and payments are made for them through a general assistance supplement. Of this group there are a few who are not willing to make the payment because they prefer a doctor that is not included in the plan. There are some who live in remote places making it difficult to get to centers where the money can be paid to the physicians, and there are a few that do not spend their money as it is budgeted. In addition to the above group, there is about three per cent who do not pay occasionally. They do pay the majority of the time and the amount is continued in their grant. There may be a relative come to visit that requires extra money, there may be a pair of shoes, or many other reasons of a like nature given as the reason for not making the payment. Sometimes they will miss one or two payments and then pay for the months in which they did not pay.

The following is the classification of the diagnosis as given to the welfare department by the physicians. A physician assisted in this in order that we might better be able to get this accurately.

CLASSIFICATION OF DIAGNOSIS

Diagnosis	Per Cent
1. Hypertension and Heart Disease.....	18.95
2. Stomach and Intestinal Diseases.....	11.45
3. Burns, Lacerations, Fractures, Sprains and Infections	7.5
4. Bronchitis and Pneumonia.....	6.66
5. Urological Diseases	6.57
6. Nervous Diseases	5.16
7. Arthritis	4.69
8. Genital and Pelvic Inflammation.....	3.94
9. No diagnosis and merely Examinations.....	3.47
10. Mouth and Throat.....	3.47
11. Ear	3.19
12. Influenza	2.82
13. Eye	2.72
14. Skin Disease	2.25
15. Nose	1.97
16. Blood Vessel Diseases.....	1.97

17. Psychoneurosis	1.69
18. Gall Bladder Disease	1.6
19. Diabetes	1.5
20. Tumor and Malignancy.....	1.41
21. Nutritional Disease	1.4
22. Obstetrics	1.12
23. Anesthesia .....	.94
24. Glandular Disease .....	.94
25. Rectal .....	.75
26. Appendicitis .....	.66
27. Venereal Disease .....	.47
28. Anemia .....	.37
29. Contagious Disease .....	.28
30. Hernia .....	.09

100.00

The majority of our clients have indicated they prefer the present plan to the old. The following reasons have been given: there is less red tape, medical care is more easily provided, and there is a feeling of security in case medical care is needed. Those persons who have needed medical care frequently have been the strongest supporters of the plan. The most frequent criticism is the inconvenience in making the monthly payments. The clients would prefer that the payment be made to the medical society for them. A few persons who are not favorable have indicated there have been questions of personalities involved and the plan is not at fault.

The physicians although not receiving very much in a financial way seem to be satisfied with the plan. They like the fact it is no longer necessary to contact the welfare office to get authorization for medical care. They now have the responsibility for determining who is in need of medical care and how much to give. The members have indicated at times they would like to have the hospitalization and drugs excluded from the plan, however, they do realize they are in a better position to control expenditures for these items and continue to accept this responsibility. If some method could be worked out so the payment could be made in a lump sum directly to them they would much prefer that over the present plan of collection. All in all the physicians seem agreed that the plan is a step forward and have been willing to cooperate in every way possible to make the plan successful.

The home visitors without exception believe the plan is better than the old system. When the clients have missed making a payment and the visitor has to call in the latter part of the month, they sometimes feel the old plan was better, however, this is not general. They feel the same as the clients and physicians believe the plan of making a lump sum payment direct to the medical society would be better than the present method of payment. The responsibility of determining the need of medical care is removed and this relieves considerable strain

to them and the county director. They believe that if possible a plan to include dental care, nursing care, glasses, and ambulance service would also be advisable.

The criticism is undoubtedly true that under the present plan the visitors are not in as close a contact with the physicians as previously. We get reports from the physicians monthly which are brief and cannot give as complete information as when personal contacts were made. This problem should be worked out in the future.

Suggestions for future changes would be making a lump sum payment to the physicians and thereby saving the trouble of paying to the clients, collecting by the physicians, and checking by the visitors. If the plan could include nursing care, dental care, ambulance service, and necessary appliances, it would be a big improvement and no doubt would do a great deal to provide care for our clients that is now being provided in a haphazard manner or not at all.

TUBERCULOSIS CONTROL

PNEUMOTHORAX IN PATIENTS OVER FORTY

Sidney Diamond

Hubert T. Ivey

A survey was made of 431 white World War veterans in whom pneumothorax was instituted or attempted after they had passed their fortieth birthday, during a five-year period beginning January 1, 1935. Every one of the patients had a positive sputum and a roentgenographically demonstrable cavity at the inauguration of his collapse program. Eighty-one per cent had far advanced disease; nineteen per cent had moderately advanced lesions. The disease process was unilateral in 49.3 per cent and bilateral in 50.7 per cent. Fourteen per cent had at least one cavity whose diameter exceeded four cm. The average age was slightly under forty-four years—seven per cent were over fifty. The duration of the patients' tuberculosis prior to the attempted induction of pneumothorax ranged from one month to eighteen years.

Patients with apparently permanent closure of the cavities and conversion of the sputa were classed as "Successful" and these numbered ninety-two, or 20.2 per cent. The "Unsuccessful" numbered 48.7 per cent and the "Impossible" 31.1 per cent. The

various complications of artificial pneumothorax occurred with no greater frequency than among younger patients. Death was due directly to the complications of pneumothorax in five patients. Sixteen of the patients who died had pure tuberculous empyemata, though it is difficult to estimate the degree in which the presence of intrapleural pus contributed to these deaths, for in all cases the pulmonary lesion was actively progressive. Including these sixteen cases, the fatalities consequent to complications would number only twenty-one or 4.9 per cent of the patients treated, about what may be expected in general.

The shorter the time the patient has been ill and the less extensive his lesion, the greater the chances for the success of the therapy and the smaller the probability of occurrence of empyema. Closure of the cavity is effected earlier in patients whose disease history has been brief, though pleural effusions (a complication of little significance in most cases) are more likely to supervene in persons who have had tuberculosis only a short time.

The time interval of cavity closure and sputum conversion varies directly with the patient's age; most of the pneumothoraces became successful in the latter half of their first year. It seems advisable, therefore, to maintain pneumothoraces of doubtful efficacy for a longer time in persons over forty than would be wise in younger patients.

Bilateral pneumothorax, properly administered in carefully selected cases, is well tolerated and ordinarily occasions no marked respiratory embarrassment. The surgical division of pleural adhesions is necessary to the completion of the collapse in a large number of persons in the fifth decade, just as it is in younger patients.

Weighing the results and the complications, the authors conclude that artificial pneumothorax is of distinct value in the treatment of patients over forty. It is not as effective as in younger persons, but neither is any other therapeutic measure. Thus far it appears that artificial pneumothorax is enduring in its effects in persons over forty, but final conclusions cannot be drawn until most or all patients in the successful group have been observed for a sufficient length of time after reexpansion to permit accurate estimation of the lasting effectiveness of their pneumothorax.—From Tuberculosis Abstracts, July, 1941; abstracted from American Revision of Tuberculosis, April, 1941.

In the United States 5,000,000 people are sick every day, and every year over 10,000,000 have accidents.—Bulletin of The National Tuberculosis Association.

THE EFFECT OF ANESTHETICS UPON THE LIVER (Continued from Page 297)

Anesthesia from the Pharmacological Standpoint, *Anesth. and Analg.*, 18:270, Sept.-Oct., 1939.

35. NacNider, Wm. deB.: The Acute Degenerative Changes and the Changes of Recuperation Occurring in the Liver from the Use of Ethyl Alcohol, *J. Pharmacol. and Exper. Therap.*, 49:100, 1933.

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37. Neale, R. C.: The Protective Action of Certain Purines Against Liver Necrosis Produced by Carbon Tetrachloride and Chloroform, *Science*, 86:83, July 23, 1937.

38. Neale, R. C., and Winter, H. C.: Identification of the Active Crystalline Substance from the Liver which Protects against Liver Damage due to Chloroform or Carbon Tetrachloride, and a Study of Related Compounds, *J. Pharmacol. and Exper. Therap.*, 62:127, Feb., 1938.

NEWS NOTES

COMMITTEES

Dr. Clyde D. Blake of Hays, President, has announced the following new Society committees which will serve for the year 1941-42:

ALLIED GROUPS TO MEDICAL PRACTICE

George E. Milbank, M.D., Chairman.....	Wichita
G. A. Finney, M.D.....	Topeka
L. M. Hinshaw, M.D.....	Bennington
W. E. Janes, M.D.....	Eureka
J. L. Lattimore, M.D.....	Topeka
C. D. McKeown, M.D.....	Wichita
E. A. Marrs, M.D.....	Sedan
R. R. Melton, M.D.....	Marion
George E. Paine, M.D.....	Hutchinson
Earl Vermillion, M.D.....	Salina

AUTOMOBILE ACCIDENTS AND FRACTURES

H. M. Glover, M.D., Chairman.....	Newton
C. E. Boudreau, M.D.....	El Dorado
A. L. Hilbig, M.D.....	Liberal
C. H. Johnson, M.D.....	Kinsley
Willis H. McKean, M.D.....	Kansas City
H. E. Snyder, M.D.....	Winfield
C. B. Trees, M.D.....	Topeka

AUXILIARY

C. Omer West, M.D., Chairman.....	Kansas City
Herbert L. Atkins, M.D.....	Pratt
J. B. Carter, M.D.....	Wilson
Hugh A. Hope, M.D.....	Hunter
J. L. Jenson, M.D.....	Colby
C. M. Miller, M.D.....	Oakley
J. S. Reifschneider, M.D.....	Wichita
C. H. Warfield, M.D.....	Wichita
H. H. Woods, M.D.....	Topeka

CHILD WELFARE

B. I. Krehbiel, M.D., Chairman.....	Topeka
Paul E. Belknap, M.D.....	Topeka
T. J. Brown, M.D.....	Hoisington
George E. Burket, Jr., M.D.....	Kingman
Paul C. Carson, M.D.....	Wichita
Paul R. Ensign, M.D.....	Topeka
M. W. Husband, M.D.....	Manhattan
Donald N. Medearis, M.D.....	Kansas City
F. L. Menehan, M.D.....	Wichita
E. G. Padfield, M.D.....	Salina
J. A. Wheeler, M.D.....	Newton

CONSTITUTION AND RULES

A. W. Fegty, M.D., Chairman.....	Wichita
H. E. Haskins, M.D.....	Kingman
M. D. McComas, M.D.....	Courtland
C. M. Nelson, M.D.....	Oberlin
R. T. Nichols, M.D.....	Hiawatha

CONSERVATION OF EYESIGHT

George Gsell, M.D., Chairman.....	Wichita
J. A. Billingsley, M.D.....	Kansas City
R. E. Cheney, M.D.....	Salina
J. G. Janney, M.D.....	Dodge City
H. L. Kirkpatrick, M.D.....	Topeka
L. A. Latimer, M.D.....	Alexander
C. J. Mullen, M.D.....	Kansas City
W. D. Pitman, M.D.....	Pratt
H. W. Powers, M.D.....	Topeka
W. W. Reed, M.D.....	Topeka
E. N. Robertson, Sr., M.D.....	Concordia
W. M. Scales, M.D.....	Hutchinson
Dale D. Vermillion, M.D.....	Goodland

CONTROL OF CANCER

H. E. Snyder, M.D., Chairman.....	Winfield
L. G. Allen, M.D.....	Kansas City
F. R. Croson, M.D.....	Clay Center
C. A. Hellwig, M.D.....	Wichita
J. S. Hibbard, M.D.....	Wichita
C. C. Nesselrode, M.D.....	Kansas City
A. K. Owen, M.D.....	Topeka
H. P. Palmer, M.D.....	Scott City
Lloyd W. Reynolds, M.D.....	Hays
A. F. Rossitto, M.D.....	Wichita
C. H. Smith, M.D.....	Pittsburg
B. V. Thompson, M.D.....	Hoxie
M. Trueheart, M.D.....	Sterling
Karl E. Voldeng, M.D.....	Wellington

CONTROL OF TUBERCULOSIS

Omer Raines, M.D., Chairman.....	Topeka
F. C. Beelman, M.D.....	Topeka
I. R. Burket, M.D.....	Ashland
J. L. Jenson, M.D.....	Colby
R. G. Klein, M.D.....	Dodge City
C. H. Lerrigo, M.D.....	Topeka
W. N. Mundell, M.D.....	Hutchinson
J. W. Spearing, M.D.....	Columbus
C. F. Taylor, M.D.....	Norton
H. N. Tihen, M.D.....	Wichita
F. A. Trump, M.D.....	Ottawa

DEFENSE BOARD

L. S. Nelson, M.D., Chairman.....	Salina
James D. Bowen, M.D.....	Topeka

ENDOWMENT

H. L. Chambers, M.D., Chairman.....	Lawrence
F. C. Boggs, M.D.....	Topeka
H. O. Bullock, M.D.....	Independence
E. S. Edgerton, M.D.....	Wichita
H. P. Jones, M.D.....	Lawrence
Ray A. Meidinger, M.D.....	Highland
P. A. Petitt, M.D.....	Paola
J. T. Reid, M.D.....	Iola
H. R. Schmidt, M.D.....	Newton

EXECUTIVE

Clyde D. Blake, M.D., Chairman.....	Hays
Geo. M. Gray, M.D.....	Kansas City
F. L. Loveland, M.D.....	Topeka
John M. Porter, M.D.....	Concordia
Henry N. Tihen, M.D.....	Wichita

HISTORY

L. F. Barney, M.D., Chairman.....	Kansas City
David E. Green, M.D.....	Pleasanton
W. Y. Herrick, M.D.....	Wakeeney
G. L. Kerley, M.D.....	Topeka
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C. D. Updegraff, M.D.	Greensburg
J. V. VanCleve, M.D.	Wichita

FORGOTTEN FACTORIES

Of constantly increasing importance to all Kansas industry is the national defense program. A few Kansas communities have had unusual plant expansion, others have completely new plants under construction or planned. The vast majority of Kansas communities, however, will play whatever part they take in the national defense program with their existing industrial facilities.

A number of the larger factories of Kansas are now in defense production, and this utilization of Kansas resources is a source of earnest and patriotic satisfaction to all Kansas. The picture is yet incomplete, however, and a very real problem of defense production confronts the smaller industries of Kansas.

The full industrial might of the nation—and of Kansas—will not be harnessed until the countless small manufacturing and machine shops are enrolled in defense work. The use of these small plant facilities, while much publicised, has not yet become a fact in Kansas—and the prospect of such use is not as bright as we would like to see it.

Throughout the state there are small plants capable of producing moderate-sized orders—craftsmen capable of close tolerance work—management prepared and willing to take its part in national defense. The majority of such plants have had no opportunity to bid on defense contracts, and many are not on the lists in the army, navy and defense offices.

Such plants are now the chief concern of this commission. We fear that, unless these shops are in line for defense work, there will be a wholesale dislocation of craftsmen and machines from Kansas communities throughout the state. Also the shortage of production materials for peacetime uses may soon force many small factories into idleness.

Apparently the best answer to this problem at the present time is to make sure that every Kansas factory and shop is on the lists of the Defense Contract Service so that they may be invited to bid or recommended for sub-contracting work. Accordingly we are urging every plant in Kansas not so listed, to send a complete description of machines, production capacity and experience to the Defense Contract Service, Federal Reserve Building, Kansas City, Missouri, or to this Commission.

In addition, most of this Commission's staff is now devoting its entire time to defense matters, and will be glad to render any possible assistance to Kansas firms at any time.

KANSAS INDUSTRIAL DEVELOPMENT COMMISSION

STATE HOUSE

TOPEKA

CONGRESS

H. R. 4965, which includes among other things an authorization and appropriation for the United States Army to employ interns, and which was amended by the House of Representatives to make possible the employment therein of osteopaths as well as graduates of approved medical schools, was passed by the United States Senate on June 30.

In the hearing upon the bill before the Senate Committee on Appropriations, Brigadier General L. B. McAfee, Assistant to the Surgeon General of the Army, made the following comment:

"The change is objectionable because it defeats the purpose of the intern system in Army hospitals. The intern system in Army hospitals was inaugurated shortly after the first World War, in order to act as a feeder, a means of securing medical men, doctors, of class A standards, for the Regular Medical Corps. Many of them were not acquainted with the life in the Army or the practice in our hospitals; and by taking them as interns and giving them a year's course, and then surveying them with the idea of tendering them commissions in the Regular Service, we were able to stimulate our procurement.

Along in November we select these interns from four year medical men; and each intern selected makes a statement that if tendered a commission following his internship in any Army hospital he will accept the same and will serve for at least three years.

If the provision were extended to include graduates of a school of osteopathy we could not, under our standards, use such graduates in the Medical Corps; and with such an authorization we would be put in the position of training men who we could not accept in the Regular Medical Corps or in the Reserve Corps."

The Senate Committee on Appropriations deleted the osteopathic portion of the amendment inserted by the House of Representatives and included the following statement in its report of the bill to the Senate:

"(1). The War Department maintains a high standard for its medical officers. They must be graduates of schools which have the sanction of the committee on medical education and licensure (Council on Medical Education and Hospitals) of the American Medical Association.

(2). None of the schools of osteopathy have applied to this committee (Council) for inclusion in the list of standard medical schools. Therefore, all of the schools of osteopathy are now substandard as far as medical education is concerned. Until schools of osteopathy are recognized by the American Medical Association as equal to the standard schools of medicine, their graduates are not accepted for service in the Army." (House Report No. 476.)

In the discussion of the bill on the floor of the Senate, Senator Joseph C. O'Mahoney of Wyoming re-submitted the osteopathic amendment and the amendment was again included in the bill by a vote of the Senate. Hence, H. R. 4965 as finally passed contains the authorization for employment of osteopaths as interns in the Army.

Since H. R. 4965 is an appropriation measure, the above amendment will be effective only during the fiscal year of the appropriation covered. Likewise, since the amendment was worded in an optional manner the army has the choice of employing or not employing osteopaths as it wishes. There is however, another bill, H. R. 4476, pending in the

House of Representatives in which the osteopaths are attempting to have their participation in the Army made permanent.

OSTEOPATHS

Two cases involving osteopaths who were charged in injunction actions with violating the medical practice act were heard by the Kansas Supreme Court on July 1. The cases were *State vs. Meucke* and *State vs. Moore*, which were appealed by the defendant osteopaths from the Pratt County District Court and the Barber County District Court respectively.

The osteopaths advanced the argument to the Supreme Court that although they had engaged in medical and surgical procedures such were a part of the practice of osteopathy. The State, as plaintiff, argued that this question has been previously decided and that it is therefore not a valid defense.

The cases were argued on behalf of the State by Mr. Theo F. Varner, attorney for the Board of Medical Registration and Examination. The osteopaths were represented by Mr. Earl Hatcher of Topeka.

1942 STATE MEETING

The Sedgwick County Medical Society was host at a meeting held in Wichita on July 2, at which representatives of that society and of the Butler-Greenwood County Medical Society, the Cowley County Medical Society, the Kingman County Medical Society, the Pratt County Medical Society and the Sumner County Medical Society discussed plans for the next annual meeting of the Society which will be held in Wichita on May 11-15, 1942.

The representatives of the Sedgwick County Medical Society stated that the members of that society are very glad to avail themselves of the offer made by the above county medical societies to assist in handling the arrangements for the Wichita annual session and thus that the July 2 meeting had been called for the purpose of preparing and coordinating plans in that regard.

After discussion of various possibilities, decision was made that the Cowley County Medical Society will have charge of the arrangements for the scientific exhibits; that the Sumner County Medical Society shall assist in preparation of the scientific program; that the Pratt County Medical Society will aid in the plans for entertainment events; that the Butler-Greenwood County Medical Society will assist in the arrangements for the golf and trap tournaments; and that the Kingman County Medical Society will provide help in other arrangements.

The Sedgwick County Medical Society is to be congratulated for its experiment in this direction. If the plan of co-sponsorship of arrangements for Society state meetings can be made to operate satisfactorily, it would seem possible that all of the county medical societies in the state can thereby be extended an opportunity to assist in preparing the program and other events of the annual meetings.

APPOINTMENT

Governor Payne H. Ratner recently announced the appointment of Dr. Paul E. Belknap of Topeka as a physician member of the Kansas Committee on Nutrition.

This committee, which will be composed of representa-

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NORMAL INFANTS

Whole milk 10 ozs.
Water, boiled 10 ozs.
Karo syrup 2 tbs.

Evaporated milk 6 ozs.
Water, boiled 12 ozs.
Karo syrup 2 tbs.

Powdered milk 5 tbs.
Water, boiled 20 ozs.
Karo syrup 2 tbs.

ALLERGIC INFANTS

Evaporated goat's milk . . 6 ozs.
Water, boiled 12 ozs.
Karo syrup 2 tbs.

Hypoallergic milk 10 ozs.
Water, boiled 10 ozs.
Karo syrup 2 tbs.

Sobee 8 tbs.
Water, boiled 18 ozs.
Karo syrup 2 tbs.

NEUROPATHIC INFANTS

Evaporated milk 7 ozs.
Water, boiled 13 ozs.
Barley flour 3 tbs.
Karo syrup 1 tbs.
(cooked ten minutes
until thick)

Whole milk 12 ozs.
Water, boiled 6 ozs.
25% Lactic acid 2 tsp.
Karo syrup 2 tbs.

2% Lactic-acid milk 18 ozs.
Karo syrup 2 tbs.

"Newborns tolerate a simple formula consisting of 10 ounces of boiled fresh cow's milk, 8 ounces of sterile water and 1 ounce of mixed sugar. Added carbohydrate in the form of corn syrup is usually better tolerated than the simple sugars, lactose or sucrose. At first, about one ounce of the formula will be taken at a time although the infant is allowed all he will take of the three ounces and the remainder discarded. The allergic newborn may be given evaporated cow's-milk or goat's-milk formulas; the hypertonic newborn thick feeding; the hypotonic newborn, evaporated or lactic-acid milk formulas."

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tives of various organizations in the state and which will cooperate with a national committee and similar committees in other states, will prepare studies and recommendations on foods, diets, vitamins and other nutritional subjects.

The Kansas committee will consist of twenty members. Dr. Margaret Justin of the Kansas State College of Manhattan will be the chairman.

NEW LICENSEES

The Kansas State Board of Medical Registration and Examination which held its annual meeting at the Wyandotte High School in Kansas City, Kansas, on June 17-18, 1941, announces that licenses will be issued to the following named doctors of medicine.

NAME	ADDRESS
Henry Aldis.....	Kansas City
Horace A. Anderson.....	Independence
Henry D. Barker.....	Junction City
Willis L. Beller.....	Russell
Anna R. Benjamin.....	Topeka
Lewis C. Blackburn.....	Kansas City, Missouri
Loren O. Bohnen.....	Leonardville
Ralph W. Bohnsack.....	Kansas City, Missouri
Earl G. Bramble.....	Oil City
John J. Clark.....	Kansas City
John G. Claypool.....	Kansas City
George W. Davis, Jr.....	Kansas City, Missouri
Mark Dodge.....	Salina
Hayden H. Donahue.....	Wellington
Robert M. Drisko.....	Kansas City, Missouri
Robert H. Dunham.....	Iola
Jack C. Dysart.....	Sterling
B. Landis Elliott.....	Kansas City, Missouri
Stephen S. Ellis.....	Coffeyville
Anna H. Entz.....	Whitewater
Franklin W. Foncannon.....	Emporia
Morris L. Friedman.....	Kansas City, Missouri
William H. Fritzemeier.....	Stafford
John H. Gaskins.....	Kansas City, Missouri
G. Leonard Harrington, II.....	Independence, Mo.
Loren W. Haus.....	Turner
James E. Hemphill.....	Clay Center
Elmer E. Hinton.....	Hamlin
William K. Hokr.....	Ellsworth
Walton C. Ingham.....	Lawrence
Samuel E. Kerr.....	Kansas City, Missouri
Roy C. Knappenberger.....	Penalosa
Louis Kovitz.....	Kansas City, Missouri
Richard M. Logue.....	Tulsa, Oklahoma
Dale U. Loyd.....	Morland
Earl L. Loyd.....	Salina
Thomas J. Luellen.....	Newton
John F. McDonnell.....	Caldwell
James E. McConchie.....	Washington
Wayne W. McDougal.....	Colby
Charles R. Magee.....	Pretty Prairie
Charles E. Magoun.....	Topeka
Russell J. Maxfield.....	Garden City
Theodore R. Maxson.....	Iola
Tjaart R. Nanninga.....	Abilene
Heinrich W. Neidhardt.....	Independence
Gaylord P. Neighbor.....	Overland Park
Rollin R. Nevitt.....	Moran
Milton H. Noltensmeyer.....	Kansas City
Richard H. O'Donnell.....	Hutchinson
Norman H. Overholser.....	El Dorado

Graham J. Owens.....	Kansas City, Missouri
John V. Plett.....	Buhler
John F. Pohlman.....	Wichita
Albert E. Pugh.....	Kansas City
Paul Rapoport.....	Kansas City
Joe G. Reed.....	Larned
Jack W. Revere.....	Kansas City
Frank A. Rieke.....	Shawnee
Emmett J. Riordan.....	Pittsburg
Thomas P. Robb.....	Kansas City
Lewis L. Robbins.....	Topeka
Bruce E. Roesler.....	Claflin
Paul H. Royse.....	Kansas City
Michael J. Ryan.....	Kansas City
James H. Sawtell.....	Topeka
Jack E. Schiffmacher.....	Kansas City
Lloyd E. Schwartz.....	Topeka
Doyle A. Shrader.....	Sawyer
Louis N. Speer.....	Osawatomie
Maurice H. Stauffer.....	Kansas City
Kathryn L. Stephenson.....	Kansas City, Missouri
Paul L. Stitt.....	Kansas City
Francis M. Stone, Jr.....	Fort Scott
John V. Sullivan.....	Bird City
Daniel L. Tappen.....	Saline
Robert M. Thomas.....	Green
Hill C. Thurman.....	Lawrence
Robert C. Turner.....	Mankato
Charles E. Vilmer.....	Pittsburg
Bernard C. Wildgen.....	Hoisington
Vincent T. Williams.....	Kansas City, Missouri
John L. Whitaker.....	Paola
Doyle C. Whitman.....	Salina
Edward V. Williams.....	Ellsworth
Robert S. Young.....	Fort Scott

The Board held its post examination meeting at Parsons on June 27, for confirmation of the grades of the applicants who had taken the examinations on June 17-18.

The Board will hold a special examination on September 23-24, 1941, in Kansas City, Kansas, for the September graduates of the School of Medicine, University of Kansas.

The next regular meeting of the Board will be held in Topeka, at the Kansan Hotel, on December 9-10, 1941.

At the annual meeting on June 17, Dr. M. C. Ruble of Parsons was reelected President of the Board for the ensuing year, and Dr. J. F. Hassig of Kansas City was reelected Secretary for a term of four year. Other members of the Board are: Dr. H. E. Haskins of Kingman, Dr. J. E. Henshall of Osborne, Dr. C. E. Joss of Topeka, Dr. O. L. Cox of Iola, and Dr. R. G. Ball of Manhattan.

ROCKY MOUNTAIN MEDICAL CONFERENCE

The members of the Society have been extended an invitation to the Third Biennial Rocky Mountain Medical Conference which will be held at the Canyon Hotel in Yellowstone National Park from September 2-4. The following guest speakers are scheduled to appear on the scientific program: Dr. Frank H. Lahey of Boston, President of the American Medical Association; Dr. James G. Carr of Chicago, Illinois; Dr. Guy A. Caldwell of New Orleans, Louisiana; Dr. Winchell McKendree Craig of Rochester, Minnesota; Dr. Alex F. Hartmann of St. Louis, Missouri; Dr. Clarence M. Hyland of Los Angeles, California; Dr. Arnold S. Jackson of Madison, Wisconsin; Dr. Rosco G.

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MEDICINE—Two Weeks Intensive Course starting October 6th. Two Weeks Course in Gastro-Enterology starting October 20th. Four Weeks Course in Internal Medicine starting August 4th. Two Weeks Intensive Course in Electrocardiography & Heart Disease starting August 4th.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.

GYNECOLOGY—Two Weeks Intensive Course starting October 20th. One Month Personal Course starting August 25th. Clinical Course every week.

OBSTETRICS—Three Weeks Personal Course starting August 4th. Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 8th. Informal Course every week.

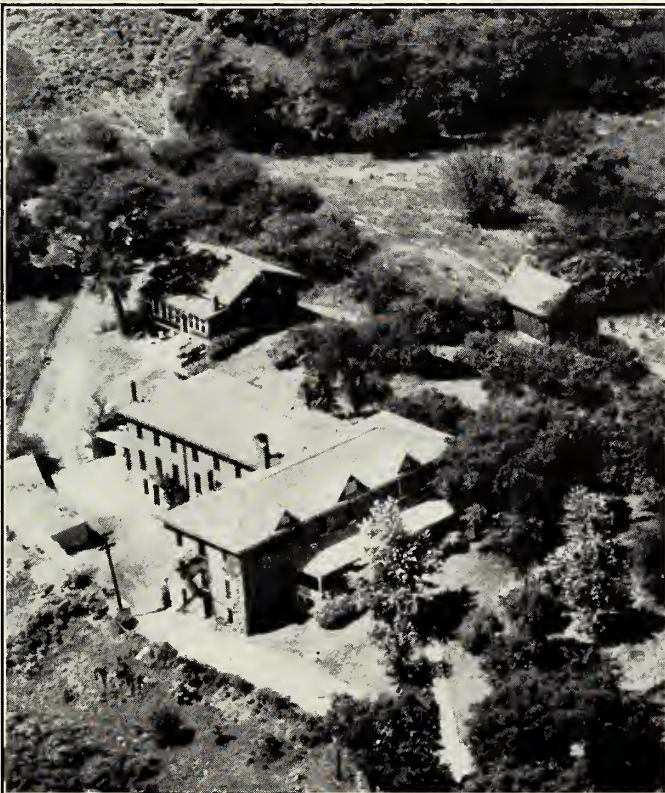
OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.

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Leland of Chicago, Illinois; Dr. Norman F. Miller of Ann Arbor, Michigan, and Dr. John R. Nilsson of Omaha, Nebraska. The conference is sponsored by the medical societies of the states of Colorado, Montana, New Mexico, Utah and Wyoming, with Wyoming acting as the host for the 1941 meeting.

ANNUAL RE-REGISTRATION

The annual registration fee for Kansas doctors of medicine is due and payable July 1, 1941. The fee is \$1.00 until October 1, after which time there is a penalty of \$5.00 required by law for reinstatement of a Kansas license.

Notices were mailed out June 20 to the last known address of each licensee, and if any doctor has not received his notice, he should notify Dr. J. F. Hassig, Secretary, Kansas State Board of Medical Registration and Examination, 905 North Seventh Street, Kansas City, Kansas.

TECHNICIANS COURSE

Washburn Municipal University of Topeka has announced that it will institute a medical technicians course effective with the beginning of school this year. The course will be four years in length and a Bachelor of Science Degree will be conferred upon graduation. Graduates will also be qualified to take the registry examination given by the American Society of Clinical Pathology. The fourth year of the course will include practical experience in approved hospitals, in order that students may obtain actual practice as well as theoretical instruction.

Dr. W. M. Mills and Dr. J. L. Lattimore of Topeka are members of the Board of Regents of the University.

QUESTIONNAIRE

To date sixty-seven county medical societies in this State have returned the medical preparedness questionnaire pertaining to physicians who are available and non-available for military service. The presidents of the county medical societies in each county were asked to make arrangements for the assembly of this information. The completed copies of the questionnaire will be forwarded to the Committee on Medical Preparedness of the American Medical Association.

COUNTY SOCIETIES

The Central Kansas Medical Society held a meeting on June 19 in Ellsworth. Speakers were Dr. Clyde D. Blake of Hays who spoke on "Appendicitis"; Dr. L. E. Eckles of Topeka who spoke on "Measles," and Dr. Alfred O'Donnell of Ellsworth who spoke on "History of the Central Kansas Medical Society." A dinner, at which the wives of members attended, was held following the scientific program. The next meeting of the society will be held in Russell on September 18.

The Cowley County Medical Society met in Arkansas City on June 19. Dr. V. L. Pauley of Wichita spoke on "Treatment of the Prostate Gland." Dr. C. T. Moran of Arkansas City spoke on "Masking of Symptoms of Sulfanilamide in Mastoid."

The Golden-Belt Medical Society held a dinner meeting in Manhattan on July 10, with the Riley County Medical Society as host. Speakers were: Dr. Charles Shofstall of Kansas City, Missouri, who discussed "Routine Office Procedure or Treatment of the More Common Pharyngeal and Nasal Conditions" and Dr. C. C. Dennie of Kansas City, Missouri, who spoke on "Dermatoses in Infants and Children." Drs. C. D. Armstrong of Salina and E. H. Decker of Topeka discussed the papers. Following the dinner, Mr. Howard Hill, of the Kansas State College of Manhattan was a speaker and Dr. E. Raymond Gelvin of Concordia showed movies of a recent trip.

The Barber County Medical Society met on July 9 at Fort Scott. The speaker for the meeting was Mr. R. E. Graham of Oklahoma City, Executive Secretary of the Oklahoma State Medical Association.

A meeting of the Lyon County Medical Society was held on July 1 in Emporia. Speakers were Dr. A. W. Corbett of Emporia who discussed "Appendicitis in Adults" and Dr. D. R. Davis of Emporia who discussed "Appendicitis in Children."

The Pratt County Medical Society held a dinner meeting on June 27 in Pratt. Guest speakers were: Dr. A. E. Hiebert of Wichita who spoke on "Burns" and Dr. J. V. VanCleve of Wichita who discussed "The Diagnosis and Treatment of the Commoner Skin Ailments."

The quarterly meeting of the Southeast Kansas Medical Society was held in Altamont on June 18. Dr. Henry N. Tihen of Wichita reviewed "Therapy in Gastro-intestinal



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Diseases" and Dr. Fred J. McEwen of Wichita spoke on "Cardiac Emergencies and Their Treatment."

The Sumner County Medical Society met in Wellington on June 19. Speakers were Dr. Ray A. West of Wichita who spoke on "Toxemias of Pregnancy" and Dr. J. Allen Howell of Wellington who discussed "The Role of Anesthetics and Analgesias in Obstetrics."

The Wilson County Medical Society met in Neodesha on June 2. A symposium on "The Heart and High Blood Pressure" was conducted with all in attendance participating in the general discussion.

MEMBERS

Dr. Ernest Seydell of Wichita was elected president of the American Otological Society at a meeting of that society held in Atlantic City on May 26-28, 1941.

Dr. A. L. Ashmore of Wichita was selected as Kansas Governor of the American College of Chest Physicians, at the recent meeting of that organization held in Cleveland, Ohio, from May 31 to June 2, 1941.

Dr. Ralph L. Drake of Wichita was made a diplomate of the American Board of Psychiatry and Neurology at a meeting of that Board held at Washington, D. C., on May 2-3, 1941.

Dr. O. W. Miner of Garden City has been appointed city physician of that city for a two-year term.

Dr. C. C. Hawke of Winfield presented a paper on "Castration vs. Vasectomy as a Surgical Procedure for the Feeble Minded" before The American Association on Mental Deficiency which was held at Salt Lake City, Utah, on June 20-25. Dr. Hawke was also elected Regional Director for the North Central States of the organization at the meeting.

Announcement was recently made that the following members serving in the military forces have received promotions in rank: Dr. L. B. Gloyne of Kansas City, Dr. Earl B. Ross of Wichita, and Dr. E. K. Lawrence of Hiawatha have been promoted to the rank of Lieutenant Colonel. Dr. L. E. Knapp of Wichita has been promoted to the rank of Major.

DEATH NOTICES

Dr. William George Bourse, 66 years of age, was killed by a train on June 20 in Goff. Dr. Bourse was graduated in 1906 from the Kansas Medical College of Topeka and

had practiced in Goff for twenty years. He was a member of the Nemaha County Medical Society.

Dr. Frederick Emmett Dillenbeck, 74 years of age, died on June 5 after a long illness, at his home in El Dorado. Dr. Dillenbeck was born in St. Lawrence County, New York, in 1867 and was graduated from the University College of Medicine of Kansas City in 1896. He was a member of the Butler-Greenwood County Medical Society.

Dr. Walter H. Graves, 88 years of age, died on June 14 at his home in Wichita. Dr. Graves was born in 1853 at Jacksonville, Illinois and was graduated from the Northwestern University School of Medicine in 1882. He was an honorary member of the Sedgwick County Medical Society. Dr. Graves was the last surviving member of the original board of trustees of Fairmount College of Wichita.

Dr. Robert E. Gray, 79 years of age, died June 17, following an automobile accident near his home, in Garden City. Dr. Gray was graduated from the Rush Medical College of Chicago in 1896. He was an honorary member of the Finney County Medical Society.

ANNOUNCEMENT

Examinations for entrance into the Navy as commissioned officers in the Medical Corps will be held for the commission of Acting Assistant Surgeon (Intern) on October 6, 1941, and January 5, 1942, and for the commission of Assistant Surgeon on August 11, 1941, October 6, 1941, and January 5, 1942. Applications must be sent to the Bureau of Medicine and Surgery of the Navy three weeks prior to the date of the examination. Requests for applications should be forwarded to the Bureau which is located in Washington, D. C. Examinations will be held at all of the larger Naval Hospitals and at the Naval Medical Center, Washington, D. C.

The American Congress of Physical Therapy will conduct a course on instructions each morning throughout the Annual Session which will be held in Washington, D. C., on September 1 to 5 inclusive, 1941, with headquarters at the Mayflower Hotel. For information on the courses offered or the general scientific and clinical sessions address: The American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois. The 25th Annual Meeting of the American Occupational Therapy Association will be held in Washington at the same time. For information on the latter meeting address: Mrs. Meta R. Cobb, 175 Fifth Avenue, New York City.

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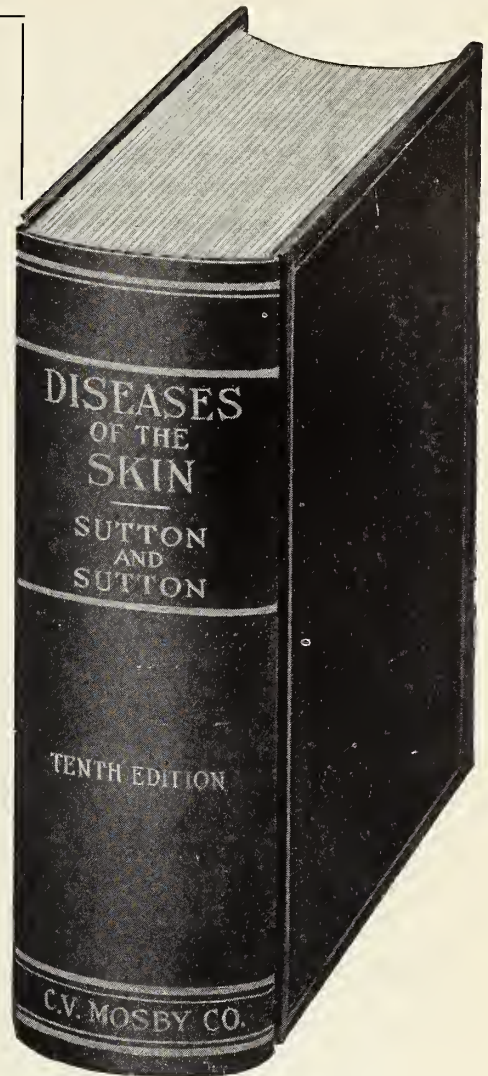
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BOOKS RECEIVED

GETTING READY TO BE A MOTHER—Carolyn Conant Van Blarcom. Published by the Macmillan Company, New York, 1940, Fourth Edition, priced \$2.50.

PHYSICAL DIAGNOSIS—Ralph H. Major, M.D., Professor of Medicine, University of Kansas. Published by the W. B. Saunders Company, Philadelphia, Pa., 1940.

MANAGEMENT OF THE CARDIAC PATIENT—William G. Leaman, Jr., M.D. Published by J. B. Lippincott Company, Philadelphia, Pa. 1940. Price \$6.50. Containing 255 original illustrations and 705 pages.

GYNECOLOGY, Medical and Surgical—P. Brook Bland, M.D. Third revised Edition, with 445 illustrations and 843 pages. Published by the F. A. Davis Company, Philadelphia, 1939.

PLAGUE ON US—Geddes Smith. Published by the Commonwealth Fund, New York, 1941, Price \$3.00. Subtitles are Pestilence; Past Thinking; The Sick Man; The Sick Crowd; Defense; Detective Work; Unfinished Business; Epilogue.

AN INTRODUCTION TO DERMATOLOGY—Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.), Emeritus Professor of Dermatology, University of Kansas School of Medicine, and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (Edin.), Assistant Professor of Dermatology, University of Kansas School of Medicine. Fourth Edition Published by the C. V. Mosby Company, St. Louis, Missouri, 1941. With 904 pages and 723 illustrations.

MANUAL OF CLINICAL CHEMISTRY—Miriam Reiner, M.Sc. Assistant Chemist to the Mount Sinai Hospital, New York. Published by the Interscience Publishers, Inc., New York, 1941. Containing 296 pages.

THE 1940 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY—Obstetrics Edited by Joseph B. DeLee, A.M., M.D., and Gynecology Edited by J. P. Greenhill, B.S., M.D., F.A.C.S. Published by the Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, Illinois. Priced at \$2.50. Contains 714 pages illustrated.

THE DOCTOR TAKES A HOLIDAY—Mary McKibbin-Harper, M.D., dedicated to the American Medical Women's Association. Published by the Torch Press of Cedar Rapids, Iowa, 1941.

THE MASK OF SANITY, An Attempt to Reinterpret the So-Called Psychopathic Personality—Harvey Cleckley, B.S., B.A., M.D. Published by the C. V. Mosby Company, St. Louis, Missouri, 1941. Priced at \$3.00.

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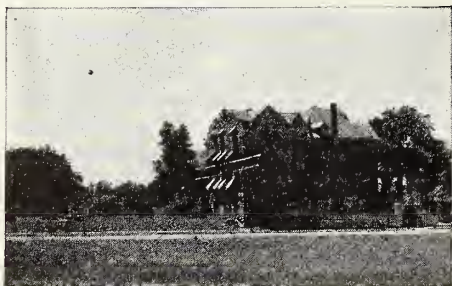
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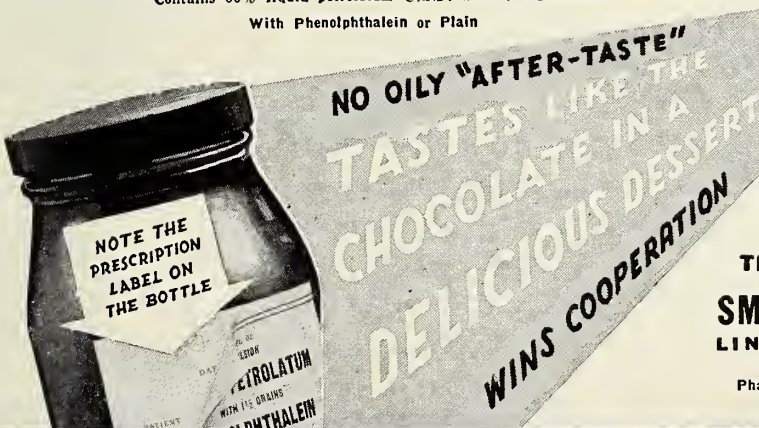


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INTRODUCTION TO PSYCHOBIOLOGY AND PSYCHIATRY, A Text Book for Nurses—Esther Loring Richards, M.D., Sc.D., Associate Professor of Psychiatry, Johns Hopkins University; Physician-in-Charge of the Out-patient Department, Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital; Psychiatrist-in-Chief, Baltimore City Hospitals. Published by the C. V. Mosby Company of St. Louis, Missouri, 1941. Priced at \$2.50. Contains 357 pages.

EFFECTIVE LIVING—C. E. Turner, A.M., Sc.D., Dr. P.H., Professor of Biology and Public Health, Massachusetts Institute of Technology, formerly Associate Professor of Hygiene, Tufts Medical and Dental Schools, formerly Director of Health Education Studies, Malden, Massachusetts, Chairman, Health Section World Federation of Education Association and Elizabeth McHose, B.S., M.A., Director of Physical Education for girls and Chairman of the Health Council, Senior High School, Reading, Pennsylvania. Published by the C. V. Mosby Company, St. Louis, Missouri, 1941. Containing 432 pages, and 164 illustrations. Priced at \$1.90.

A DIABETIC MANUAL—Elliott P. Joslin, M.D., Sc.D., Clinical Professor of Medicine Emeritus, Harvard Medical School, Medical Director George F. Baker Clinic at the New England Deaconess Hospital, Consulting Physician, Boston City Hospital, Boston, Massachusetts. Seventh Edition, Published by the Lea and Febiger Company of Philadelphia, Pa., 1941. Priced at \$2.00. Contains 238 pages illustrated.

ESSENTIALS OF DERMATOLOGY—Norman Tobias, M.D., Senior Instructor in Dermatology, St. Louis University, Assistant Dermatologist Firmin Desloge and St. Mary's Hospitals, Visiting Dermatologist, St. Louis City Sanitarium and Isolation Hospital. Published by the J. B. Lippincott Company, Philadelphia, Pa., 1941. Priced at \$4.75. Contains 497 pages illustrated.

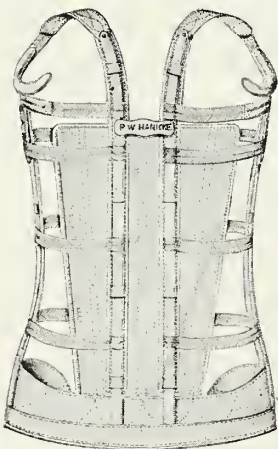
ELIMINATION DIETS AND THE PATIENT'S ALLERGIES, A Handbook of Allergy—Albert H. Rowe, M.D., Lecturer in Medicine, University of California Medical School, San Francisco, California, and consultant in allergic diseases, Alameda County Hospital, Oakland, California. Published by Lea & Febiger, Philadelphia, Pa., 1941. Containing 264 pages, priced at \$3.00.

INFANTILE PARALYSIS, A Symposium Delivered at Vanderbilt University, on April, 1941. Published by the National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York City, 1941. A series of six lectures given under the auspices of the National Foundation for Infantile Paralysis.

PRACTICAL OBSTETRICS—P. Brooke Bland, M.D., and Thaddeus L. Montgomery, M.D. Third revised Edition, illustrated with 502 engravings, and having 877 pages. Published by the F. A. Davis Company, 1939.

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BOOK REVIEWS

DIRECTORY OF MEDICAL SPECIALISTS, Certified by American Boards, 1939—Paul Titus, M.D., Directing Editor. Published for the Advisory Board for Medical Specialists by the Columbia University Press, New York, 1940. Priced at \$5.00. The book is the only official directory of its kind, listing approximately 14,400 diplomates certified by the twelve special American Boards and one of the two affiliate boards. It contains a separate section devoted to each American Board, and a complete alphabetic list of all the diplomates, with addresses and specialty certification. The organization and examination requirements of each Board is explained in full. The following Boards are listed: The American Board of Anesthesiology, Dermatology and Syphilology, Internal Medicine, Obstetrics and Gynecology, Ophthalmology, Orthopaedic Surgery, Otolaryngology, Pathology, Pediatrics, Plastic Surgery, Psychiatry and Neurology, Radiology, Surgery, and Urology. The directory is a valuable source of information for doctors, hospitals, social agencies, organizations and all others affiliated with the medical profession.

A MANUAL OF THE COMMON CONTAGIOUS DISEASES—Philip Moen Stimson, A.B., M.D., Professor of Clinical Pediatrics, Cornell University Medical College. Published by Lea & Febiger, Philadelphia, Pa., 1940. Price, \$4.00. The third edition of this manual, much of which has been rewritten, contains sound, concise and helpful material on instruction on the more common contagious diseases, such as diphtheria, Vincent's angina, scarlet fever, measles, rubella, whooping cough, mumps, chickenpox, smallpox, meningococcus meningitis and poliomyelitis. The book is a good clinical guide for practitioners, specialists in

children's diseases, health officers, school and industrial physicians, internes and nurses. The principles of contagion and serum reactions are discussed with the newest on general management of contagious diseases under varying conditions and treatments for all of the diseases listed.

NEW AND NONOFFICIAL REMEDIES, 1940—Published by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Price, \$1.50. The book contains the revised list of articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association, on January 1, 1940. It contains the revised list of articles not accepted; articles off the market; action, use and dosage of articles; composition and standard purity and identity of strength and physical properties on many of the substances. The book is a practical up-to-date text of pharmacology and therapeutics.

PHYSICAL THERAPY FOR NURSES — Richard Kovacs, M.D. Published by Lea & Febiger of Philadelphia. The book is now in its second edition revised, priced at \$3.25. The author is an outstanding authority on the subject of physical therapy and has compiled a 335-page manual of instruction for the use in nurses' training to enable the average nurse to assist more intelligently the physician in the application of physical measures. Each of the following physical forces are discussed: physics and physiological effects of heat; radiant heat; artificial fever; ultraviolet rays, physics and effects; heliotherapy; artificial light therapy; electrophysics; general electrotherapy and galvanic current. Dr. Kovacs is clinical professor and director of Physical Therapy of the New York Polyclinic Medical School and Hospital; and Attending Physical Therapist, of Manhattan State, Harlem Valley State and West Side Hospitals of New York.

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PRESIDENT'S MESSAGE

These are vacation days for many of you but still you can be thinking and doing some constructive planning for the progress of our Auxiliary. We need to encourage and do everything possible to increase our membership. During the past year we gained five new auxiliaries with approximately seventy-six new members. We should make this year an educational year not only in family nutrition, but in legislation and public relations, as they pertain to the medical profession.

A most interesting address was given at Cleveland in which a basic menu was given. We were advised to eat the foods given in this menu first and then to add whatever we like afterwards. We hope that this menu can be printed in this issue of the Journal. A most worth while article on nutrition is on page 2854 of the June 28th issue of the Journal of the American Medical Association.

Let us enter into the new year of work with a determination to study the objectives of the different departments, and the unlimited possibilities of our Auxiliary becoming a valuable asset to The Kansas Medical Society. We must first sell the Auxiliary to ourselves and then—only, can we hope to interest other eligible members.

Mrs. W. Y. Herrick.

COUNCILORS

The councilors of the Auxiliary and the expiration date of their term of office are as follows:

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Second District—Mrs. E. R. Millis, Kansas City.....	1942
Third District—Mrs. Chas. Miller, Parsons.....	1943
Fourth District—Mrs. James Bowen, Topeka.....	1943
Fifth District—Mrs. H. W. Jury, Claflin.....	1942
Sixth District—Mrs. Bruce Meeker, Wichita.....	1942
Seventh District—Mrs. E. N. Robertson, Concordia.....	1944
Eighth District—Mrs. Leo Schaeffer, Salina.....	1942
Ninth District—Mrs. C. F. Taylor, Norton.....	1944
Tenth District—Mrs. Murray Eddy, Hays.....	1944
Eleventh District—Mrs. J. R. Campbell, Pratt.....	1943
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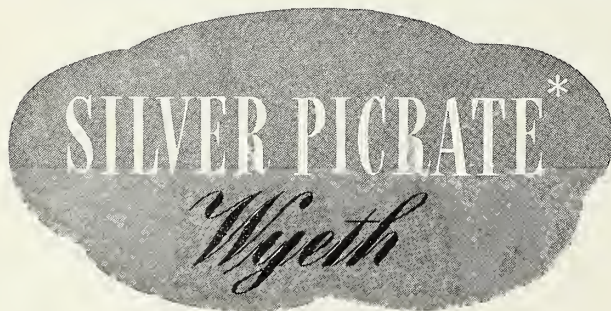
BUSINESS ACTION AT CLEVELAND

The National Auxiliary almost unanimously approved the establishment of a permanent central office with a hired secretary. This will facilitate the conduct of business and greatly relieve the president of the Auxiliary of a vast amount of detail and correspondence. The executive committee was empowered to select both the place for the office and also the secretary. The budget presented and accepted for the new year will take care of this expense.

The Advisory Council to the Auxiliary from the American Medical Association sent out questionnaires to all the incoming state presidents asking their opinion on the rais-

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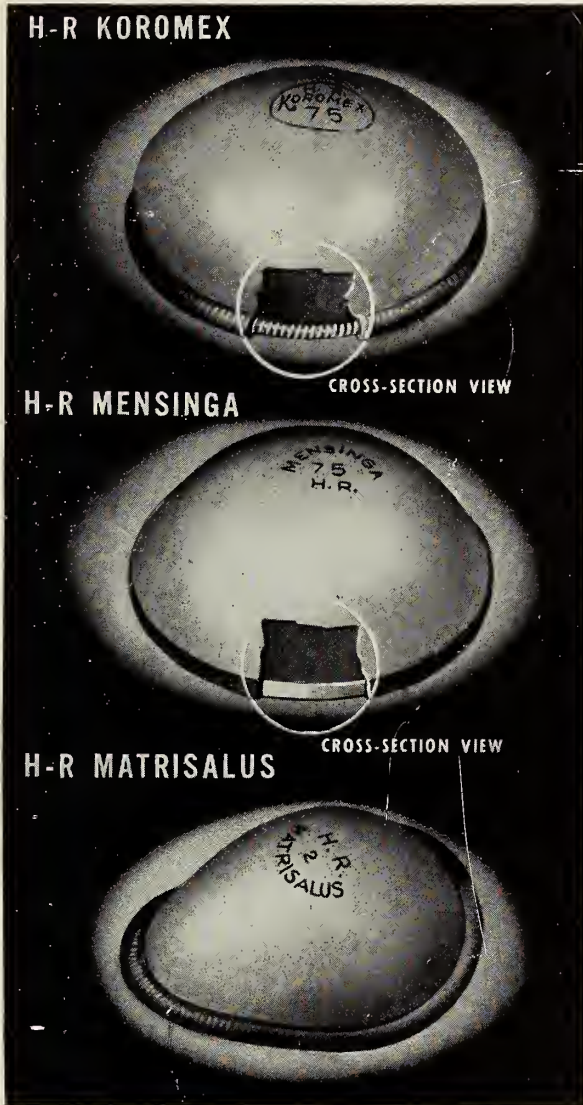
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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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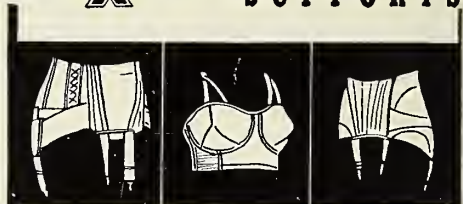
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EMERGENCY ABDOMINAL CONDITIONS AMONG INFANTS AND CHILDREN*

Roger L. J. Kennedy, M.D.**

Rochester, Minnesota

Two chief difficulties face the physician who is confronted with the problem of deciding whether an infant or child is suffering from an abdominal condition which should be considered as an emergency; that is, one which demands immediate surgical relief. On the one hand, he must recognize the conditions for which surgical intervention is imperative, and on the other, what frequently is much more difficult, he must be able to determine when an apparent emergency is to be accounted for by the presence of some non-surgical disease. Success in arriving at a proper diagnosis frequently will depend upon a proper approach to the young patient, sufficient time to elicit a complete history and to carry out a thorough examination and a knowledge of the possibilities which may explain the signs and symptoms.

CONGENITAL OBSTRUCTION

In the newborn infant the prompt return of food may occur after every feeding. Sometimes the vomitus contains only food. At other times there may be bile in it. In the presence of abdominal distention, particularly in the epigastrium, in the absence of stools and sometimes with visible peristalsis from left to right, the possibility of congenital atresia or other types of pyloric or duodenal obstruction must be considered. Obviously, if the obstruction is complete, surgical measures must be carried out promptly to afford relief, where that is possible.

PAIN

Evidence of pain probably is the most common indication of the presence of acute intra-abdominal disease among infants and children. Among really

young patients, that is, those aged two or three years and less, objective findings must be relied on almost entirely, since these patients are unable to describe subjective sensations.

COLIC

Crying or screaming by the small infant usually is interpreted by persons outside the profession, and frequently by physicians, as an indication of abdominal pain. No doubt the diagnosis most frequently made for such a young patient is colic. The baby of two or three to ten or twelve weeks of age begins to cry lustily between feedings and particularly at night. Frequently, he will flex the legs at the knees and the thighs on the abdomen. This is interpreted as representing certain evidence of pain in the abdomen; that is, "stomach-ache." Then and there begins a long list of procedures aimed at curing the baby of his "colic." Walking the floor with the infant, rocking the infant in a cradle, application of a hot water bottle to the abdomen, giving of a nipple as a pacifying measure, administration of paregoric, laxative agents and physics are usually tried and found to be of no avail in controlling the condition. Discontinuance of breast-feeding, change from simple milk formulas to evaporated milk formulas or to lactic acid milk formulas, to goat's milk and back again to simple milk formulas, all seem to make the condition worse rather than better.

A carefully obtained history in such a case usually will reveal certain facts, such as the following in a hypothetical case. The infant's birth and progress were normal up to two or three weeks of age. From that time onward the baby seemed to have much pain in the abdomen, cried much, drew up the legs while crying, and kept the entire family awake. All sorts of arrangements for feeding were tried. The child continued to gain in weight. Examination reveals a well-developed and well-nourished infant. The abdomen is soft, not distended, apparently not tender and there are no palpable masses. The rectal temperature is normal. The inguinal rings are closed, the umbilicus is not bulging and is not reddened. Results of examination, in other words, are negative.

The problem in such a case is one, first of convincing the parents and frequently the grandparents

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that there is nothing seriously wrong with the baby and second, of securing their co-operation in allowing the baby to be quiet and to develop regular habits of eating, resting and perhaps also of crying. If the supply of breast milk has not disappeared, the baby should be returned to the breast, and it should be made certain that it receives an abundant supply of food. Complementary feeding may have to be resorted to until the supply of breast milk has become adequate.

Although this particular type of so-called colic is not in itself an example of an emergency abdominal condition it is to be distinguished from conditions which actually are examples.

PYLORIC STENOSIS

Although, ordinarily, pyloric stenosis or obstructing fibrous bands do not create the picture of an acute condition the first indication of their presence may be sudden and there may be evidence of severe pain and vomiting. The presence of visible peristaltic waves passing from left to right usually is conclusive evidence of obstruction at or near the pylorus. I have observed one infant, aged seven weeks, who was subjected to a Rammstedt operation two days after the onset of symptoms, which appeared suddenly and were severe from the time of onset. A markedly hypertrophic pyloric muscle was found and incised.

INTUSSUSCEPTION

Evidence of colicky abdominal pain among infants from six months to two years of age should give rise to the suspicion not only of incarcerated hernia but also of intestinal obstruction and most frequently of intussusception. For some time after the onset of intussusception the only symptoms may be a sharp cry which recurs at intervals up to an hour. Between the paroxysms occasioned by the periodic excessive peristaltic efforts of the bowel to rid itself of the invaginated mass, the child appears to be rather comfortable. He may and frequently does fall asleep. His general condition does not appear to be bad.

As intussusception progresses, vomiting and characteristic bloody discharges from the bowel appear. Usually, by twelve to eighteen hours after the onset, there is evidence of toxemia and shock. The child may become more quiet. Pallor and sunken eyes are evident. The baby becomes less aware of his surroundings. With the advent of the more serious stage of the condition fever of variable degree occurs.

For some time after the onset the abdomen may appear to be fairly normal. During the paroxysms of pain it is held rigid as the baby cries out with discomfort. In the intervals between the episodes

of pain, the typical, sausage-shaped mass may be palpated along the course of the ascending and transverse portions of the colon. It may be well to emphasize the fact that failure to palpate such a mass may be disregarded if the other striking features are present. Further, it is to be remembered that a palpable mass is less likely to be present in cases of ileo-ileal intussusception than in the more usual instances of ileocolic or colocolic forms.

Within the first few hours after the onset of intussusception, digital examination of the rectum probably will not reveal the mass, which later may be evident. However, the examining finger on withdrawal will be coated with blood or bloody mucus. Such an observation is corroborative of intussusception and is an indication for immediate surgical treatment. It is true that in a large percentage of cases the intussuscepted mass presents in the rectum or at the anus, so that it can be easily palpated and at times visible, but by the time this happens the process will have been present so long that gangrene has occurred, so that the possibility of reduction of intussusception has ceased to be. Every effort made to determine the presence of intussusception is worth while, so that the condition may be diagnosed and treated before irreparable changes take place in the bowel.

The prognosis in cases of acute intussusception is dependent on several factors. The most important of these is the duration of the process from the time of onset to the time of treatment. If every instance of the condition could be recognized and treated within twelve hours after onset, the mortality rate would be low. It is for this reason, just as is the case with acute appendicitis, that the parents should be taught to report to the physician untoward behavior on the part of infants, and that the physician should learn not to regard lightly the early symptoms of these two conditions which may be so lightly dismissed as representing merely "belly-ache."

The situation of the lesion caused by intussusception probably is next in importance in determination of the chances for recovery. If intussusception is ileocecal, the chances that it may be reduced are better than they would be if it were of the ileo-ileal type. The smaller ileum can be withdrawn from the larger colon into which it has become telescoped. Frequently this may be accomplished with ease by means of one of several procedures and attention can be directed to the bowel so as to prevent recurrence. If the invaginated bowel has become gangrenous, resection, performed in either one stage or two stages, is necessary, in which case the prognosis becomes very grave. If the ileo-ileal type of intussus-

ception has occurred the possibility of reduction without resection is decidedly smaller and for that reason, this type of intussusception, though it is less frequent, presents a much more formidable problem than do the other types.

The essential treatment of intussusception is of course surgical. Occasionally, intussusception undergoes spontaneous regression, or regression may be brought about during the administration of an anesthetic agent preliminary to operation. General supportive measures to combat toxemia and shock also are of importance. Transfusions of blood and the intravenous and subcutaneous administration of fluids such as physiologic solution of sodium chloride and solutions of glucose are the chief supportive measures to be used.

INGUINAL HERNIA

Perhaps the infant has not only cried lustily, but has screamed rather continuously at intervals of a few minutes to an hour for a period of a few hours or a day. Such a circumstance concerning an infant who has seemed to be well up to the time the crying is noticed is cause for the careful taking of a history and the making of an examination, including abdominal examination. The cry or scream coming at intervals should give rise to a suspicion of real colic. Examination of the inguinal rings may give evidence of a firm mass, palpation of which may result in increased outcry indicative of tenderness. The diagnosis of incarcerated inguinal hernia is then clear; if knowledge of a previous hernia can be obtained, such a diagnosis is almost certainly correct.

It is obvious that the presence of a hernia is essential to the occurrence of this condition. Since strangulation is due to inability on the part of the involved portion of the bowel to return from the sac into the peritoneal cavity, it is evident that herniation through a relatively narrow opening at the site of the internal ring offers greater chance for obstruction to easy return than does herniation through a relatively wide and gaping internal inguinal ring.

Although it would appear that a strangulated inguinal hernia in an infant or child is a self-evident condition, there are certain considerations which may result in delayed attention to, or indeed may lead to complete oversight of, the condition.

The fact that the hernia is small may give rise to the belief that the symptoms of pain, emesis and later, toxemia, are of other origin.

Occasionally, the rather cystic feel of the herniated mass to the examiner's hand so simulates the feeling of hydrocele as to be misleading. Irreducibility is

to be expected in the case of hydrocele and the fact, therefore, that the mass cannot be reduced may support the view that it is a hydrocele.

However, in any case (especially one in which a hernia is known to have been present) in which sudden intermittent pain, perhaps with emesis, afflicts an infant or child and in which a mass is present in the inguinal region, strangulated inguinal hernia must be suspected.

Acute inguinal adenitis may be distinguished from hernia by (1) the finding of a superficial inflammatory lesion of the thigh, leg or foot accounting for a focus of infection, (2) a difference in situation, adenitis occurring in the region of the superficial or deep inguinal lymph nodes, (3) excessive tenderness, (4) discoloration of the skin and (5) knowledge of the lack of a previously existing hernia.

The treatment of incarcerated or strangulated inguinal hernia is surgical. In the case of strangulated hernia, as is true in the case of intussusception, spontaneous reduction may take place or the hernia may reduce itself on the administration of an anesthetic agent preparatory to surgical intervention. If the evidence is strong that strangulation was of short duration, thus eliminating the possibility that the bowel has undergone necrotic change or that the circulation has had opportunity to be permanently damaged, nothing further need be done. If, however, strangulation still persists or has persisted for a considerable time before spontaneous reduction occurs, surgical exploration is advisable.

VENTRAL HERNIA

Rarely, the same type of crying is present as that which is associated with inguinal hernia, and can be accounted for by a ventral or umbilical hernia in which a portion of underlying tissue has been caught, the tension, pull or pressure of the surrounding tissue causing the pain.

OTHER LESIONS WHICH CAUSE ACUTE OBSTRUCTION

In addition to intussusception and strangulated ventral and inguinal hernias, other less frequently occurring causes of obstruction must be considered when sudden abdominal pain, vomiting, abdominal tenderness and evidence of toxemia are present. Among these are volvulus, thrombosis of mesenteric vessels and cysts of the intestinal wall, so-called enterogenous cysts. Although the presence of these conditions seldom is ascertained before operation, the surgeon must be prepared to deal with them if they are found. It is of help at times to remember that among patients suffering from intestinal obstruction, abdominal distention is much more likely

to be present when the site of the obstruction is situated high in the gastro-intestinal tract, so to speak, than when it is situated low. Obstruction situated low in the gastro-intestinal tract will cause abdominal distention only after a considerable period. In any case in which obstruction is suspected, it may be useful to make a roentgenogram of the abdomen and to examine it for distended loops of bowel or for a gas-filled stomach.

ACUTE APPENDICITIS

Of all the acute abdominal conditions which may afflict infants and children, appendicitis continues to be the most frequently encountered and the most dangerous. It causes a mortality rate which might be decreased. The reasons for the present mortality rate, in the final analysis, are delay in recognition of the presence of an acutely inflamed appendix or delay in institution of prompt surgical treatment.

Since appendicitis occurs at all stages of infancy and childhood, the problem of diagnosis differs somewhat according to the age of the patient. Frequently, the classic syndrome of generalized abdominal pain, which becomes localized to the region of McBurney's point, and nausea, emesis and fever, is absent. Very young patients, that is, infants aged two years and less, are likely to present crying as the only evidence of pain when acute appendicitis is present. Emesis that does not relieve the pain is strongly suggestive that appendicitis is present. Emesis and fever may or may not be present. The important factor in such an instance is the examination, and in this, success or failure frequently depends on the exercise of patience and time necessary to overcome the fear and apprehension of the little patient. If, with the patient in the condition of relaxation (which may be present for only an instant between episodes of crying), definite tenderness and muscle spasm can be elicited by pressure over McBurney's point, the likelihood of acute appendicitis may become strong. Thought must be given, of course, to the conditions which may simulate acute appendicitis; especially to pyelitis, mesenteric adenitis, pneumonia and to some of the less frequently encountered conditions. Unless the evidence is rather strongly in favor of one of the latter conditions prompt surgical treatment becomes mandatory.

Tenderness may be only relative, that is, it may be elicited by the lightest touch or may be evident only on deep palpation. Furthermore, comparison of the two sides of the abdomen may be necessary to determine the point of maximal tenderness. The situation of the appendix among children usually is higher than it is among adult persons and

frequently the appendix is retrocecal, in which case the point of maximal tenderness would be higher or less definite than a similar point among adult persons.

Rectal examination, which offers even greater difficulty in the young, is of importance and frequently more than repays the time spent in gaining the confidence and co-operation of the patient. In the presence of an acutely inflamed appendix, increased tenderness on the right side is likely to be elicited, and occasionally the examining finger will help to determine the presence of an inflammatory mass.

The leukocyte count in the circulating blood usually is increased to 12,000 or more, the increase being accounted for largely by the increase in the number of polymorphonuclear cells to eighty per cent or more, and when such increases are found, they usually constitute confirmatory evidence of acute appendicitis. However, the absence of such an increase does not rule out acute appendicitis, and conversely, the presence of leukocytosis does not in itself establish the diagnosis of acute appendicitis.

If all instances of acute appendicitis among children could be diagnosed and treated within twenty-four hours after the onset, the probability is that the mortality rate would approach zero. It is among infants and younger children in particular that delay usually takes place and it is among these patients that perforation occurs with such great frequency. Perforation occurs with a frequency that is in inverse ratio to the age of the patient as well as to the curve of incidence. Analysis of a large group of cases showed that the time elapsing between the onset of symptoms and institution of treatment was considerably greater among very young patients, hence, the higher percentage of perforations in that group. Unfortunately, among very young persons the omentum is not fully developed and these tiny patients, therefore, lack the "walling-off" and protective function which reduces the likelihood of early generalized peritonitis among older children and adult persons.

Although the differential diagnosis of acute appendicitis involves the elimination of a number of other conditions, perhaps the greatest problem is presented by the necessity for distinction between appendicitis and pneumonia. It is well to consider the differential diagnostic features in any case in which the possibility of pneumonia is present. Pain in the thorax is not present in appendicitis. Characteristic facies with dilatation of the ala nasae, abdominal breathing and grunting respiration all serve to indicate pneumonia, and are not exhibited in appendicitis. Although vomiting in appendicitis is rather frequent, it is relatively rare in pneumonia.

Diarrhea does occur in some cases of appendicitis, but it is much more common when diseases of the respiratory tract are present. The severe, constant and generalized nature of abdominal pain in pneumonia differs from the paroxysmal, localized pain of appendicitis. In cases of pneumonia with associated abdominal tenderness, the tenderness usually is very marked, but also is definitely superficial. By gradual increase in the pressure exerted by the examining hand, it is possible to press deeply without initiating any increase of discomfort. In appendicitis the opposite is true. Although the tenderness may be slight or severe, it is characteristically more marked on deep pressure and there is usually a maximal point of tenderness which may be found. The rectal examination usually will elicit more tenderness on the right side in cases of appendicitis. Generally, the leukocyte count tends to be high in pneumonia, extending from 20,000 to 50,000 cells, whereas in appendicitis it tends to range from 10,000 to 20,000 cells. The temperature in the presence of pneumonia characteristically increases to rather high values, whereas in appendicitis it seldom increases to more than 102 degrees F. (38.8 degrees C.). If the history, physical examination and leukocyte count do not remove doubt, time should be taken to make a roentgenogram of the thorax to exclude shadows, particularly in the lower lobe of the right lung.

MECKEL'S DIVERTICULUM AND MESENTERIC ADENITIS

Although it is always desirable to determine, if possible, the exact nature of any disturbance that gives rise to the picture of acute abdominal disease before surgical intervention is carried out, two conditions other than acute appendicitis offer diagnostic problems which usually make it impossible to distinguish them from acute appendicitis. These are an inflamed Meckel's diverticulum and acute mesenteric adenitis. Either may produce a picture which is clinically indistinguishable from that of appendicitis. The character and situation of the pain, elevation of temperature, polymorphonuclear leukocytosis and point of tenderness may indicate involvement of the appendix, but at operation the appendix may be found to appear normal. The importance of Meckel's diverticulum and of mesenteric adenitis as possible sources of the clinical disturbance then becomes prominent, for the surgeon must explore the terminal portion of the ileum and the mesentery for the presence of one or the other of these conditions as an explanation of the symptoms. It obviously would be an error of judgment to close the abdomen after removal of a normal appearing appendix without the making of a search of these two regions for more definite signs of dis-

ease. If there is a history of intermittent melena, the presence of Meckel's diverticulum can be strongly suspected. Some authors have expressed the opinion that acute mesenteric adenitis can be distinguished from acute appendicitis, but this opinion does not appear to be tenable. While I am considering acute mesenteric adenitis, it may not be out of place to insist that the making of a diagnosis of acute mesenteric adenitis is not justifiable by the mere finding of rather large mesenteric lymph nodes at the time of operation. The fact that children who are well nourished and who have not been subject to a prolonged or wasting disease are bountifully supplied with lymphoid tissue must be kept in mind when the presence of disease in the lymph nodes is evaluated merely on the basis of the size of the nodes. To be certain that acute mesenteric adenitis is the cause of the symptoms, it is necessary to remove a lymph node and demonstrate by pathologic examination the presence of acute inflammation.

PRIMARY PERITONITIS

Abdominal pain, generalized tenderness and rigidity are generally accepted as being prime indications of peritonitis. Among infants and children the most common cause of these signs is a perforated appendix with spread of infection throughout the peritoneal cavity. However, children occasionally are encountered who exhibit these signs, but in whom the peritonitis has an entirely different basis. They may have so-called primary peritonitis. Unless the history is typical of a history of acute appendicitis, the exact cause may not be determinable. If the condition is one of primary peritonitis, operation of course is futile. On the other hand, primary peritonitis may be present without any of the three cardinal signs of peritoneal infection. It has happened in our experience at the clinic that an infant suddenly became very ill, presented the picture of severe intoxication with ashen-gray pallor, sunken eyes, high fever and marked leukocytosis, and died within thirty-six hours without evident abdominal tenderness, rigidity or distention, only to have demonstrated at necropsy the fact that the cause of illness and death was acute primary peritonitis.

TUMORS OR MASSES

Most commonly, intra-abdominal tumors do not give rise to acute symptoms but there are instances in which the physician may be in considerable doubt as to the presence of an abdominal emergency condition among infants or children in whom sudden abdominal pain develops and in whom intra-abdominal masses are demonstrable.

A distended bladder caused by acute retention of urine will explain some of these apparent masses.

The bladder may be felt as a rather firm mass which extends from nearly the level of the umbilicus, downward and behind the symphysis pubis. Although the nature of the mass should be evident on the basis of situation and consistency, as well as from the history of absence of voiding for eight to twelve hours, it is possible to mistake the nature of the mass and to institute treatment for some other condition.

Occasionally, hydronephrosis will manifest itself in an acute manner. If the affected kidney has undergone considerable enlargement it may be palpable. However, the physician seldom encounters among children the "textbook picture" of intermittent hydronephrosis in which the kidney is said to be palpable when filled but no longer palpable after extensive voiding of urine has occurred.

Cysts of the mesentery, omentum and spleen rarely give rise to acute symptoms and although they are easily palpable after they have attained considerable size, are usually present for long periods before they are discovered.

Pelvic tumors most frequently arise from the ovaries. If such tumors are pedunculated and become twisted, severe pain, abdominal tenderness, vomiting and leukocytosis may follow. Although the suspicion may be entertained that such a tumor is present, the diagnosis is seldom made for children until the time of operation.

TRAUMA

The questions which arise when the physician is considering the effects of trauma to the abdomen might be discussed at great length without inclusion of all the problems which the subject offers. The most important consideration is whether or not rupture of a viscus has occurred, an occurrence which would allow serious hemorrhage or an outpouring of the contents of stomach, bowel or bladder into the peritoneal cavity. In the event any of these has occurred surgical exploration becomes imperative. In addition to information acquired by physical examination, observation of color, respiration, pulse and determination of values for hemoglobin and erythrocytes may be helpful in determining that continuous loss of blood or that increasing peritoneal irritation may be taking place.

One of the most frequent results of abdominal trauma is subserosal bleeding, sometimes to the extent of formation of a large hematoma. In such instances tenderness, rigidity and leukocytosis may be present and lead the examiner to the conclusion that some more serious condition is present and that operation must be carried out.

In cases in which injury has been extensive, the child probably will be in a state of shock when he

is observed. This to a great extent tends to mask some of the abdominal signs. As the obvious indications for antishock treatment are carried out, repeated careful examination of the abdomen will be of most help in elicitation of points of tenderness. Injury to each of the viscera may result in observations that are indicative of the special viscus injured. Thus, the presence of blood in the urine will indicate that some degree of trauma to the urinary tract has taken place. The patient's inability to void and an unsuccessful attempt to remove urine by catheterization are strongly suggestive that the urinary bladder has been ruptured. Increasing pallor, an increasing respiratory rate, the occurrence of "air hunger" and decreasing values for hemoglobin and erythrocytes, indicate continuous intra-abdominal hemorrhage.

Tenderness and increasing dullness in one or the other part of the abdomen will suggest the situation of the hemorrhage, and hence, the viscus in which it has taken place. Although it is true that the organ most frequently injured is the spleen, and perhaps secondly the liver, it is also true that, depending on the type of trauma that has occurred and the point of impact, any viscus may be involved. It is well to remember that evidence of intra-abdominal injury may not be present immediately, and that careful watching by the physician for a period is necessary before final conclusions can be reached.

Faké "Eye Doctors" are abroad again, according to a letter received from a farm woman in Kansas who gave an itinerant eye "specialist" \$25 for a pair of glasses she has not received.

Several months ago, the so-called doctor called at her farm and after gaining her confidence, suggested he fit her for a new pair of glasses. The woman had felt she needed her glasses changed, but it was difficult for her to get to town to have it done. He pretended to examine her eyes, collected the money and promised the glasses would be sent within a few days. The address he gave her was fictitious, and she has not received the glasses.—From Better Business Bureau Bulletin, Kansas City, Mo.

"The well conducted medical society should represent a clearinghouse, in which every physician of the district would receive his intellectual rating, and in which he could find out his professional assets and liabilities. We doctors do not 'take stock' often enough, and are very apt to carry on our shelves stale, out-of-date goods. The society helps to keep a man 'up to the times,' and enables him to refurnish his mental shop with the latest wares. Rightly used, it may be a touchstone to which he can bring his experiences to the test and save him from falling into the rut of a few sequences. It keeps his mind open and receptive, and counteracts that tendency to premature senility which is apt to overtake a man who lives in a routine."—Osler.

PROLONGED LABOR*

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Prolonged labor is not usually attended by any great danger to either the mother or the baby. It is, however, the cause of a great deal of concern to the family and physical exhaustion to the physician. Medical opinion as to the proper management has varied widely and has resulted in many different forms of therapy, none of which, up to date, has been entirely satisfactory. Medical literature has not offered anything like an adequate explanation of the cause of the lengthening of this usually physiological process. Until one knows the cause of any abnormality one is rarely able to apply anything like adequate treatment. It would seem, therefore, that the reason or reasons for long labor would long ago have been thoroughly searched out and explored. That such has not been done can probably be explained on several grounds.

We have had handed down to us many different explanations, some of which seem to apply in each given instance of prolonged labor. Elderly primiparas have long been thought to be fit subjects for prolonged difficult labor. The short, fat woman has been considered a bad risk in this respect. Premature rupture of the membranes with so-called "dry labor" has been feared by laity and profession alike. Abnormal presentation has been blamed for our difficulty in many instances. Small pelvis or large baby leading to disproportion in the obstetric passage is frequently offered as the explanation of difficulty. A rather careful search of the literature does not reveal convincing proof that any of these explanations or all of them together can be made to apply to anything more than a very small fraction of the prolonged labors so frequently observed in routine practice. Realizing this fact, we attempted some ten years ago¹ to see whether any of these explanations or all of them together might, in part, explain this rather frequent phenomenon of prolonged labor. We demonstrated in a considerable series of cases that there was no tendency for the labor to be longer in older primiparas than in young ones. Neither height or weight of the mother was found to have any bearing on the length of the first stage. Large babies were born in as short a time as small ones. A small pelvis did not, in any way, prevent dilation of the cervix. While we could not say that brow

presentation and shoulder presentation might not cause a prolonged labor, we did demonstrate that neither breech nor occiput posterior made any considerable difference in the length of the first stage of labor.

Much of the uncertainty about prolonged labor has risen out of a certain amount of confusion of two kinds. In the first place, what might well affect the second stage of labor; namely, a large baby or a small pelvis; has also been given as a cause of difficulty in the first stage. If one will critically analyze the processes involved, it will seem quite obvious that this source of confusion should not exist. The first stage of labor has to do with effacement and dilation of the cervix which apparently goes forward about as well with the head of the baby lying free above the pelvis as it does when the presenting part is low in the birth canal (a slight difference will be demonstrated presently). The second stage of labor, on the other hand, has to do with the passage of the baby through the birth canal and, therefore, might be impeded by any considerable degree of disproportion. The first stage of labor is carried forward purely by involuntary muscle. It cannot be consciously controlled by the patient and is not affected by any condition in the patient unless, through the medium of fear and disproportionate excitation of the sympathetic nervous system¹, there may result a relative paralysis of the autonomic stimulation of the uterine muscles. The second stage of labor, on the other hand, is, at least in part, a voluntary process. Although the uterus affords a large part of the driving force, considerable aid is afforded by the muscles of the diaphragm and abdominal wall and considerable resistance is afforded, in most cases, by the voluntary muscles of the pelvic floor. These two stages of labor are, therefore, so entirely different that one frequently observes that a markedly prolonged first stage is followed by a very short second stage. Moreover, a considerable number of short first stages are followed by expulsion phases actually longer than the first stage. In any large series of cases one can usually demonstrate¹ that there is no correlation between the duration of the first stage and the duration of the second stage.

The second cause of confusion has arisen from the fact that it is frequently difficult to determine whether a given patient is actually in labor or only having false pains. Sometimes, hours of observation are required before one can say that a patient is in labor or only having settling pains. This is not only true of a patient who has these apparently rather severe pains and who then stops and goes several weeks before true labor ensues, but it is also true—

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and much more confusing—that these apparently false pains in other patients change over very abruptly into true pains with no interval between. At the present time we can, in such instances, only count both the false and true pains as a part of labor as we have no measure which will allow us to differentiate accurately between them. One clinical test of some value in this respect is the administration of one-sixth grain of morphine hypodermically. False pains will nearly always be completely stopped by the drug in this dosage whereas true pains will, at most, be somewhat slowed. If this test be too long delayed and only given at or about the time the patient changes over from false to true labor, further confusion may result. No other method known to the writer at present offers any considerable hope of eliminating this source of confusion.

The first stage of labor in primiparas requires on the average some twelve or thirteen hours; the second stage of labor about one hour. Almost all instances of prolonged labor are prolongations of the first stage. We have had only some dozen instances of the second stage prolonged beyond three or four hours in our last four thousand patients. The consideration of prolonged labor, therefore, is a consideration of prolongation of the first stage, and the remainder of this discussion will be limited to the first stage of labor.

Some years ago we realized that to understand the total length of time required to dilate the cervix we must know the condition of that cervix at the beginning of labor, as we realized that marked variations at the onset were the rule and not the exception. A considerable number of patients go into labor with the cervix quite well effaced and perhaps partially dilated. A majority of primiparas go into labor with the cervix partially effaced and with little or no dilation. A few primiparas enter labor with a long, closed, rather firm cervix. Obviously the total amount of work to be done will vary greatly in these separate groups.

Usually at the onset of labor, the pains are relatively weak, of short duration, and at intervals of several minutes apart. As labor progresses, the contractions become more intense, of somewhat longer duration, and at more frequent intervals. Variations, however, are very frequent. Quite often one will observe the same type of pains toward the end of labor as have been present in the beginning, obviously leading to a more prolonged process than if the pains had become harder and more frequent. More rarely, a falling off in the pains will be observed—so-called secondary inertia.

Over the last several years, we have been able to collect a series of 676 primiparas seen at the onset

of labor. The condition of the cervix has been accurately recorded in each of these patients, and the character of the labor pains determined and recorded at the successive stages of dilatation. (A series of 374 multiparas has been collected in the same period.) On the basis of the data recorded in this group of patients, we now have what looks like an adequate explanation of most, if not all, of the variations commonly observed and feel that we have found the principal explanation of prolonged labor.

Four pieces of information seem necessary to determine the probable length of labor in any given patient.

Effacement of the cervix seems to require about three hours of labor pains in a primipara (two hours in multipara). Most of our patients entered labor with at least partial effacement so that it would perhaps be more proper to say that remaining effacement requires about three hours on the average.

Our patients were roughly divided into two groups according to consistency of the cervix noted at the first examination. If the cervix was of a consistency of one's lip or softer, it was called "soft"; if of the consistency of the ala of the nose or firmer, it was called "firm". The firm cervix is relatively common in primiparas and relatively rare in multiparas. It seems to require about three hours more of labor pains to produce complete dilation in primiparas than is required by the soft cervix (two hours in multiparas).

If the presenting point was at or below the level of the ischial spines at the onset, the first stage of labor was one hour shorter than if the presenting point was at a higher level (the same for multiparas).

We divided our patients into three groups according to whether they had "good", "fair", or "poor" labor pains. In this grouping, we found that duration of the individual contraction was a matter of little or no importance, and we disregarded it in our classification. Intensity of contraction and frequency of contraction were both found to have a definite bearing on the progress of labor. Pains three minutes or less apart at the beginning of the dilation phase (not during effacement) and of at least fair intensity were said to be good pains. If they were less frequent or of poor intensity, they were said to be fair pains. If they were both infrequent and of poor, weak intensity, they were said to be poor pains. It was found that the primiparas with fair pains required about three hours more to dilate the cervix (multiparas two hours) than did those patients whose pains were good. Poor pains in primiparas prolong the first stage by about nine hours

(six hours for multiparas). Thus, it is apparent that station is a matter of relatively little moment, cervical effacement and cervical consistency are definite factors, and the all-important factor is the labor pains. Incidentally, it may be said in passing that none of the frequently observed presentations, such as occiput anterior, occiput posterior, breech, etc., have any bearing whatsoever on the duration of the first stage of labor. The proof of this is quite involved and will be given in a separate publication. It may also be said that the size of the baby is not a factor in the duration of the first stage of labor. Thus, none of the explanations previously offered has any bearing, and the only two factors concerned, as far as we now know, are (1) resistance offered by the cervix and (2) the frequency and intensity of the uterine contraction. Station apparently plays a definite, though minor, role. Whether it will be found that premature rupture of the membranes has any effect on either lengthening or shortening the first stage of labor, we cannot yet say. No adequate proof has yet been offered, and our own series of patients is too small upon which to base any definite statement.

Let us see from actual experience with this series of patients what may be expected under given conditions. One hundred thirteen primiparas (about one-sixth of all cases) entered labor with the cervix effaced and soft, the head engaged, and the pains became good. The average duration of the first stage of labor in this group was three hours seventeen minutes. There were only three whose labors exceeded six hours, and the longest was six hours fifteen minutes. Under favorable circumstances such as these, a labor in excess of twelve hours would be truly prolonged. In fact, under these conditions, one should seriously search for some unrecognized abnormality if the first stage goes much beyond three or four hours.

Taking the above group of 113 patients as a basis of comparison and altering each of the four factors in turn, we find that lack of effacement at the onset of labor (fifty-nine patients) resulted in about three additional hours of labor. A firm cervix also caused about three hours more to elapse before the cervix was completely dilated. If all other conditions were favorable, but the pains were only fair (thirty patients) the average was six hours forty-four minutes. A high station, everything else favorable, (forty-one patients) resulted in a first stage of four hours twenty-three minutes—about one hour more than the most favorable group.

Multiplication of abnormal factors resulted in progressive increases in the duration of the first stage so that, when we reach the group where every-

thing was unfavorable—non-effacement, high station, firm cervix, and poor pains, a group of sixteen patients showed an average duration of the first stage of twenty-nine hours thirty-seven minutes. The labor in nine of these sixteen patients exceeded twenty-four hours and in no instance was the labor less than twelve hours. I am not in a position to say what would be prolonged labor under these circumstances, but I can say quite definitely that more than twenty-four hours of labor pains is to be expected and is, therefore, not an abnormality.

It would seem, therefore, that a fully adequate explanation of the variation all the way from one to two hours (average three hours seventeen minutes) up to thirty-odd hours of labor pains is to be found in the two factors of cervix and labor pains and that, therefore, we probably need not look further for the cause of prolonged labor. When it is realized that almost all patients with labors much beyond twenty-four hours have probably had at least several hours in the beginning of "false" pains, the above explanation becomes all the more adequate.

What should be done in the way of therapy can, if the above explanation is fully accepted, now be studied much more directly than heretofore. We may rightfully expect progress to be made in this direction.

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Transfusion of stored blood without preheating is a safe, convenient and economical procedure which often avoids dangerous delays, Elmer L. DeGowin, M.D., Robert C. Hardin, M.D., and L. W. Swanson, M.D., Iowa City, declare in *The Journal of the American Medical Association* for March 9.

From a detailed study of ten patients who were given transfusions of blood mixtures varying from 77 to 59 F. they concluded that no significant lowering in the body temperature, no consistent changes in blood pressure and no untoward symptoms could be attributed to the procedure. They then administered preserved blood without preheating to 568 patients and again observed no reactions attributable to this method.

"It is still common practice," the authors point out, "to maintain at body temperature fluids which are being administered into the veins. This principle is of practical clinical importance because considerable labor is expended by the intern and nursing staff and frequently costly apparatus is used in an effort to maintain fluids at body temperature during injection. When the preserved fluid is blood, there is the danger of disintegration of the blood from the injudicious application of heat. Time may be consumed in warming blood to room or body temperature."

THE RECOGNITION AND MANAGEMENT OF THE FUNCTIONAL DISEASER *

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The functional diseaser is that patient who is suffering from an illness which is due to his mental state. Such illness has been called neurosis, hypochondria, hysteria, and other names with which are attached certain stigmata in the minds of the laymen. It is my purpose to treat this class of patients as a whole and to bring out certain points in etiology, diagnosis and treatment which apply regardless of the specific symptoms of which the individual patient complains.

The problem of dealing with patients whose troubles are functional is one which confronts every general practitioner at least daily. During 1940 my practice, which is general, included patients from practically every classification of medical science. Of my patients who were over twenty-one years of age 11.4 per cent consulted me for functional diseases only; 25.4 per cent were treated for functional conditions as well as others which were not functional; while 63.2 per cent had no functional complaints. Considering the first two groups together, 36.8 per cent of my patients required medical attention during the year for functional disease although some of these people had other non-functional conditions as well. Other physicians have placed the incidence of functional diseasers in general practice as high as forty or fifty per cent.

I cannot overemphasize the importance of taking these poor unfortunates seriously. By taking them and their complaints lightly, or even ridiculing them, the medical profession is playing into the hands of the cultists, faddists, and irregular practitioners. Functional diseasers are with us now in greater numbers than ever before and it behooves us all to accord them the consideration due any patient regardless of the cause of his illness.

The functional diseaser may center his symptoms around one organ system or, on the other hand, they may be diverse and unrelated. In the latter case the functional nature of the illness is rather easily recognized, while in the former a thorough investigation is necessary before the final diagnosis can be made. In the former group we have patients who present symptoms relating to their hearts, gastro-intestinal tracts, genito-urinary systems, or eyes, to name but

a few. In the others, symptoms are manifest all over their bodies in a completely unorganized manner. Some patients in each group may have actual organic disturbances which originated as functional conditions, but I wish to make clear that we are considering only those individuals who are ill because of disturbances of psychic equilibrium.

In discussing the cause of the functional diseaser's illness we must consider some of the exogenous influences which bear most heavily upon him. The tempo of modern life is such that it frequently makes well adjusted individuals feel that they can't keep up. What kind of a feeling, then, must it engender in the minds of those constitutionally inferior people who have a hard time living placidly even under the most quiet and sheltered conditions? Everyone is in a hurry. We travel at high rates of speed, eat at lunch counters, get our news from radio summaries, read our books in condensed form, and generally conduct ourselves as if the judgment day were just around the corner, as perhaps it is.

This state of affairs insinuates itself into business life. The competition for jobs is so keen that the employe must do all that his boss requires and a little bit more. If a man does his job well his quota is raised; if he does it poorly he is fired. Either eventuality is bad for the individual since in the first he must expend more time and energy to reach his new quota, while in the second, the loss of a job means cessation of income with the attendant mental turmoil which besets the unemployed. We have the highest standard of living in this country of any place on the face of the globe and the attempt to maintain it at this high level means more work, more sacrifice of leisure time, more worry and, as a result, more functional diseases.

It seems that matters were not bad enough as they stood so the egomaniacs of Europe started a war which threatens to engulf the entire world before it can be brought to a halt. It has been called, quite aptly, a war of nerves and it is my belief that the nerves are not confined to citizens of the definitely belligerent nations. In this country business men are worrying about their income taxes, mothers fear that their drafted sons will become permanent members of our armed forces, and the draftees themselves have to alter their plans, give up their jobs, and otherwise reconcile themselves to the inconveniences that go with compulsory military training.

Modern life does not constitute a menace to the peace of mind of the well adjusted person, but to others it presents problems of such a nature that attempts at solution leave these people in a state of mental confusion. Strecker¹ says, "We use projec-

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tion to circumvent the hard realities of our conflicts by shifting the blame we should accept ourselves onto someone else or the conditions of life. If practiced too frequently or with too much facility it becomes a menace to integrity of personality and peace of mind. It erects a barrier between the individual and seeing himself as he really is."

The childhood training of the functional diseaser is frequently responsible for his condition. Parents naturally tend to protect their children. They feel that the life of a child should be free from worry, care, and responsibility, for an unsympathetic world will force these things on them soon enough. Consequently they think for their children, shield them, take their parts, and otherwise do everything in their power to inhibit the development of full rounded personalities in their offspring. Thus, when the child grows up he is not trained to make his own decisions, to solve problems of conduct, or to map out a program for satisfactory existence. In an attempt to correct this situation the science of mental hygiene has come into prominence. According to Gardner² mental hygiene attempts to preserve mental health by aiding in adjustment. He holds that in times of stress humans revert to instinctive action whereby they surpress painful experiences to their subconscious minds. He feels, moreover, that repressed anxiety is an essential factor in forming a psychoneurosis and is usually the result of an unconscious sense of guilt based upon hatred secondary to frustration of a selfish desire. Although repressed, anxiety never lies dormant but seeks expression and may take the form, by transference, of motor and sensory disturbances closely resembling organic disease.

Some people seem to have been born with a sense of inferiority and others apparently acquire it as they develop. This sense of constitutional inferiority may be enhanced by a weak physical structure and poor resistance giving rise to numerous infectious diseases during childhood and adolescence. The mother of such a child may constantly remind him that he is delicate and soon the child learns that he can avoid many unpleasant duties and responsibilities by hiding behind his frailty. This habit becomes so firmly fixed that as he grows older it becomes an unconscious part of his personality and he develops, literally, into an individual who enjoys poor health.

With the stage all set by a high speed civilization, a nerve racking job, a sense of inferiority, and inadequate early training; what starts the functional diseaser's illness and his self-directed tour of innumerable doctors? According to Barrow³ about seventy-five per cent of functional diseasers are women and their problems are feminine because men are more apt to recognize the underlying mal-

adjustment or conflict and meet the issue or rationalize it. Anxiety states and depressive neuroses account for the illness in forty per cent of the men but only twelve per cent of the women. Forty per cent of the men and fifty per cent of the women are constitutionally inadequate. The will to get well is not strong because it means going back into a world that is already too great a challenge. Maladjustment to marital and home life cause the trouble in twenty-four per cent of the women and only eight per cent of the men. Worry and dissatisfaction in business produce symptoms in twenty-five per cent of the men while grief is responsible in eight per cent of the women and practically never in men.

The problem which confronts the medical profession resolves itself into recognition of the functional diseaser, rendering him a correct diagnosis, and instituting adequate therapy. In some functional complaints the diagnosis is easy to make, while in others it is most difficult. There is a growing tendency to consider the individual as a psycho-somatic entity. Sanders⁴ points out that there is a nervous counterpart to every organic disease and that no form of physical damage exists which is not imitated and reproduced by sensations practically identical with those produced by organic disease. It is interesting to note in this connection that some clinicians believe that there is no such thing as functional disease; that patients falling into this category are really suffering from definite pathology which, to date, we have been unable to identify. This view is expressed by Kennedy⁵ who feels that if we dig below the surface of neurologic diseases and find their origins in toxic, chemical, and glandular conditions we will eventually establish a real pathology of mind.

In support of the psycho-somatic approach to diagnosis Fetterman⁶ presents some significant facts. He feels that three situations may exist: organic disorders may produce neurotic-like symptoms; organic and functional disorders may coexist independently; and psychic disturbance may produce physiologic and even physical disorders. He further states that certain organic syndromes may be psychogenic, such as essential hypertension, exophthalmic goiter, gastric and duodenal ulcer, cardiospasm, irritable colon, and mucous colitis. He concludes by saying that it is difficult to determine, in many instances, where functional changes end and organic changes begin, and quotes from Plato as follows: "For this is the error of our day in the treatment of the human body, that physicians separate the soul from the body."

In taking the history, which constitutes the first step toward making a diagnosis, the doctor usually first suspects that he is dealing with a functional

diseaser. The physician should allow the patient to recite his symptoms and tell his story in his own way without interruption. If the symptoms seem to indicate a functional condition simulating an organic disease one should assume that the organic disease is present until it can be ruled out. If, however, the patient's complaints do not suggest an organic disease the diagnosis of a functional condition may be made more readily and safely. In these cases the complaints may be any of the following: headache, tension in the suboccipital region, pain between the shoulder blades, shortness of breath, a sensation of constriction in the throat, epigastric distress and abdominal distention following meals, easy fatigability, and insomnia. An occasional patient will state that he thinks his trouble is caused by his "nerves," but most functional diseasers do not recognize the underlying basis of their symptoms.

After the physician has become suspicious that the illness is a functional one he should make a careful attempt to determine, if possible, what might be the cause of the disturbance. This step should not be omitted, although it is extremely time consuming, but may be left until later or be drawn out and amplified over a series of several visits if necessary. The doctor should inquire into the personal life of the patient, touching on such points as home life, economic status, marital status, interests, hobbies, religious activities, sex life, and ambitions. He should ask the patient about any worries that he might have or about any problems which are confronting him.

Occasionally the illness can be attributed to something as obvious as a mother-in-law in the home or the failure to be elected president of the lodge. Usually, however, the underlying cause is something much more serious such as poverty, frustrated desires, infidelity, either real or suspected, on the part of the marital partner, or fear of serious organic disease. Whatever the cause, it has direct bearing on the type of treatment to be administered and gives a fair idea of how successful that treatment is going to be.

The functional diseaser should be given a complete physical examination and submitted to such laboratory investigation as may seem indicated. The physical examination serves to impress upon the patient that his case is being considered with the proper amount of respect and prevents the doctor from missing an organic condition either coexisting or masquerading as a functional disease.

If the physical examination reveals no systemic abnormality the physician may safely assume that he is dealing with a functional disease, provided that the symptoms bear out the diagnosis. If, on the

other hand, the physical examination does bring out physiological or anatomical derangement, these must be carefully evaluated as to their bearing on the patient's general condition. Just because a woman complains of nervousness and headaches and is found to have hemorrhoids one cannot jump to the conclusion that the rectal pathology is the cause of all her symptoms. The physical examination should be repeated from time to time, but not too frequently nor too many times. By these repetitions the physician is not placed in an embarrassing position by having his patient develop unrecognized organic pathology while undergoing treatment for a functional condition. However, the doctor who examines his patient completely too frequently may give the patient the idea that he is looking for something he can't find.

Laboratory work should be conducted as it would be in any case presenting itself for diagnosis. Just because an individual is a functional diseaser is no reason for making him the material for a technicians' field day. A complete blood count, urinalysis, and serological examination should be routine, but further tests need be made only as indicated by the presenting symptoms. The functional diseaser whose symptoms are mainly in his gastro-intestinal tract should have a gastric analysis, gastro-intestinal x-ray, and possibly a gall bladder visualization; the cardiac complainer should have an electrocardiogram; while the patient who suffers with his genito-urinary system should be subjected to a cystoscopic examination. Too much undirected laboratory work, rather than convincing the patient that he is being thoroughly gone over, is apt to make him fear that his disease has widespread ramifications.

Due to the rather indefinite nature of functional diseases, errors in diagnosis are easy to commit. To avoid making mistakes in diagnosis, which are at least embarrassing and may even be disastrous, it is well to keep a few points in mind. Do not make a diagnosis of a functional condition by exclusion alone, but make it stand on the specific findings. If functional and organic diseases are present together be sure to recognize the fact and give attention to the more important one first. Do not rely upon snap judgment.

In functional diseases, as in many others, the therapeutic test is a valuable adjunct to diagnosis. When the functional diseaser goes to his doctor he is worried about himself, but so is the patient with cancer of the stomach who may have exactly the same symptoms, and bromides will make them both feel better. However, after a careful history, physical examination, and the necessary laboratory work have been completed without revealing organic pathology,

if the patient is given treatment to improve his mental state and this causes his symptoms to subside, one may be reasonably certain that a diagnosis of functional disease is correct.

Occasionally a patient with a serious organic disease is diagnosed as a functional diseaser. This happens just often enough to require a word of warning. Comroe⁷, in a follow-up study of one hundred patients diagnosed as neuroses without important physical diagnosis, found the following facts. Forty per cent had reported definite improvement or symptomatic cure following hospital or dispensary care. In thirty-four per cent the condition had remained the same, while two per cent were worse. In twenty-four per cent definite evidence of organic disease had become manifest since discharge. In these the longest period of time elapsing was two years and the average was eight months. In seven cases death had occurred attributed to abdominal carcinomatosis, carcinoma of the liver, carcinoma of the stomach, coronary disease, Addison's disease, pellagra, and myocardial degeneration. Of the seventeen remaining cases the confirmed diagnoses were diabetes mellitus, three cases of gall bladder disease, duodenal ulcer, two cases of pulmonary tuberculosis, ureteral stone, chronic appendicitis, Buerger's disease, suppurative mesenteric adenitis, cardiovascular-renal disease with hypertension, renal calculus, uterine myoma, pregnancy, mitral stenosis, and toxic goiter. Examination of the previous records revealed symptoms which should have led to the proper diagnosis at the time of the original examination. As an extra safeguard, Wechsler⁸ states that one should not make a diagnosis of hysteria or any other neurosis in a patient past forty years of age who has not previously presented outspoken neurotic tendencies.

The treatment of the functional diseaser is an individualized affair. There are certain general principles which guide therapy but the physician must approach each problem in a slightly different way. I shall confine myself to discussing general principles and leave their modification to the individual practitioners.

When the diagnosis has been established with reasonable certainty the patient should be told that his condition is a functional one. The doctor should tell him that, while definite and annoying, his symptoms are not being produced by organic disease. This statement should be made in such a convincing manner that no doubt of its truth can linger in the mind of the patient. Any suggestion that the illness is a trivial one must be avoided. In a general way the physician should explain the nature of functional disease and give a brief outline of what

the treatment will be and what may be expected from it. Do not tell the patient that he is imagining his symptoms, and, above all, do not tell him to go home and forget his trouble; this he cannot and will not do.

Psychotherapy is the backbone of the treatment of the functional diseaser. It may not be exalted by such a name but all doctors employ it whether they know it or not. The term, however, should not be used when talking to a patient for he may associate it with serious mental disease and the institutional confinement which frequently goes with it. Psychotherapy should be applied casually, logically, and as frequently as the particular case demands. I have some functional diseasers who get along pretty well most of the time, but who occasionally retrogress and have to be taken in hand. After a session with one of these he will frequently say, "Doctor, I always feel so much better after I have talked to you." Psychotherapy is time consuming and consequently is apt to be slighted by the busy practitioner, but its importance cannot be overemphasized.

Obviously, psychotherapy can best be administered by a psychiatrist, but if every functional diseaser were to be sent to a psychiatrist there would not be enough psychiatrists to go around and the general practitioner would have to make most of his living out of obstetrics and pediatrics. I believe, although some probably disagree, that poor psychotherapy is better than none at all.

As was mentioned above, the physician should make an attempt to determine the underlying cause of the mental disturbance. Skillful questioning may be required to bring it out, and, occasionally, it never is definitely determined. If it is a deep emotion it will probably be either fear, anxiety, or shame; while, if more superficial, it may be worry about home conditions, health or finances. There are endless permutations and combinations of human emotions and any of these may be responsible for the functional diseaser's illness. Frequently, merely telling a patient that his condition is functional and not organic is sufficient to produce a cure. Usually, however, the emotional short circuit is of such long standing and is so firmly rooted that several sessions are necessary to unearth it before the problem of its disposition may even be begun.

As the second step in treatment the patient should have explained to him the relationship of his mental state to his bodily function. Most patients know that they react to conscious fear by rapid pulse, dilated pupils, and shallow respiration. These same people can be made to see that subconscious fear can cause similar disturbances of function, not so evident, perhaps, but nonetheless definite. They

know that when they are worried they sleep poorly and do not digest their food properly. By such analogies as these the doctor can convince his patient that all symptoms which the body experiences are not caused by cancer, angina pectoris, brain tumor, or other equally deadly organic conditions.

The most difficult phase of treatment is that in which the physician attempts to eliminate the cause of the patient's condition or to change his attitude toward it. Eliminating the cause may be as simple as assuring the patient that he does not have a cancer or as difficult as advising him to divorce his wife. Many times it is utterly impossible to eliminate the cause as in the case of a patient who is ill because he has lost his job and can't find another one. If the elimination of the cause presents too many obstacles the physician should make an effort to change the patient's attitude toward it. To tell a patient that it is desirable for him to take a philosophical view of poverty, an unfaithful spouse, or a frustrated desire to become an artist is one thing and to get him to do it is another. No rule-of-thumb may be set down by which this feat can be accomplished.

If the doctor is unable actively to influence his patient, he at least, can help him in a passive manner. This consists of encouraging the patient to get his troubles off his chest and is sometimes known as mental purgation. The understanding physician who lends a willing ear to the recitation of the patient's troubles frequently does about as much good as the man who, by logical reasoning, tries to change the patient's habits of thought. The individual who can tell his woes to someone derives as much benefit therefrom as does the woman who has a good cry. Each means affords an emotional outlet which leaves at least some measure of contentment in its wake.

Drug therapy in functional conditions is necessary in almost all cases, but particularly in those where the illness is of long standing and where abnormal physiological patterns have been set up. Drugs, useful in this connection, fall into two classes; those which exert a general effect on the patient, and those which aim toward improving altered function. Medication in the latter group varies depending upon which organ system is the seat of the presenting symptoms, while drugs used in the former are fairly uniform for all types of functional conditions.

Before beginning drug therapy, the physician should carefully explain to the patient that he has a condition which medicine will not cure. He should then add that drugs can make the patient more comfortable while he is undergoing treatment but that they should be considered only as symptomatic

measures, to be discarded as soon as possible. Probably the most useful drugs in functional diseases are the sedatives of which the bromides are, perhaps, the most widely used. Certain physicians have indicted their fellow practitioners on the grounds that they have produced widespread bromidism by the injudicious use of bromides in functional disorders. Such a warning, doubtless, has merit, but, considering the tremendous amount of bromide being used and the relatively few cases of bromide poisoning, I feel that its basis is more theoretical than real. However, bromides should be used cautiously for the functional diseaser is apt to be sick a long time. The other sedatives such as phenobarbital, veronal, and chloral hydrate may also be used to advantage, particularly in those people who develop intolerance to bromides.

Occasionally in treating the functional diseaser the physician finds it necessary to employ stimulants. This is rarely necessary, however, since these people are usually over stimulated in the beginning and need slowing down rather than speeding up. Their apparent exhaustion is due not to lack of stimulation but to depletion of their nervous energy caused by too prolonged natural stimulation.

In a general way the physician must make over the life of the functional diseaser if he is to be rendered symptom free or even symptom comfortable. The functional diseaser should be provided with a definite program for recreation either by means of a hobby or through some type of sport. He should be encouraged to regulate his habits in such a way that they fit in with the accepted views on mental and physical hygiene. This includes proper times for eating, sleeping, and bowel evacuation, as well as provision for periods of rest and relaxation during the day. The program should include return visits to the doctor from time to time. However, these should not be too regular or too frequent otherwise the patient will find himself leaning too heavily upon his physician for support.

A definitely useful adjunct to therapy in functional diseases is the use of the consultant, particularly the specialist. Even though the patient has the utmost confidence in his family doctor it is well to have the diagnosis substantiated by someone whose authority is recognized. This can be tactfully arranged and when the patient returns to the fold he is more receptive than ever to the words of wisdom of his attending physician.

The prognosis of a functional condition may be brought in advantageously as part of the treatment. The prognosis should be good but not enthusiastic. The patient should be told that his condition has been a long time developing, as usually it has, and

will take quite a while to cure. The patient becomes discouraged when a rapid cure fails to materialize as promised and feels that he is hopelessly incurable or that his physician is incompetent.

Regarding prognosis itself little can be said. The factors involved are too variable to make positive assertions possible. After considerable experience the shrewd physician will consider the type of patient, duration of the disease, underlying cause, and severity of symptoms before rendering a prognosis. Even then he will be wise to avoid embarrassment by making only guarded statements even to members of the patient's family. To have the most value, prognosis should be made only after the patient has been under treatment for some time and his response observed.

SUMMARY

The functional diseaser is that patient whose symptoms are produced as a result of disturbed mental or emotional equilibrium with or without organic pathology. He is found in greater numbers now than ever before due to our high speed civilization, economic uncertainties, and the impending shadow of war. He is usually a constitutionally inferior individual whose early training did not equip him adequately to meet the problems of life. His subconscious worry, anxiety, fear, or shame plague his mind until they are converted into physical symptoms to relieve the mental tension. The experienced physician usually recognizes the functional diseaser as he is recounting his symptoms, and is relatively certain of his diagnosis when physical findings and laboratory tests fail to show the presence of organic pathology. However, errors of diagnosis are not too uncommon and should be guarded against. The functional diseaser is treated mainly by psychotherapy with drugs playing a small and supporting part. The prognosis is variable and the physician who makes a positive one is asking for trouble.

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MANAGEMENT OF THE MENOPAUSAL SYNDROME WITH STILBESTROL*

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In the last few years, the value of the steroid estrogenic hormones in the treatment of the menopausal syndrome and other allied conditions has been fully established and their usefulness demonstrated in vaginitis, both senile and juvenile, pruritus vulvae, migraine, chronic cystic mastitis, nausea and vomiting of pregnancy, amenorrhoea, dysmenorrhoea, hypoplasia of the uterus, and even atrophic rhinitis. The only drawbacks attending the clinical use of estrogenic hormones are the relatively high cost of potent preparations and the necessity of administering them by injection, since the oral route involves a high percentage of loss. In 1938 Dodds and his associates announced an orally potent, synthetic estrogenic substance called stilbestrol, and it has since then been subjected to extensive clinical trials in Europe and in American clinics. Stilbestrol is structurally quite different from the sterols. Chemically it is di-hydroxy diethyl-stilbene. Dodds and Lawson found that stilbestrol is several times more potent than estrone and at least as active as estradiol in biological tests. Mazer, Israel and Ravetz,¹ found the biologic potency, when given hypodermically, to be five times greater than estrone and equal to that of estradiol benzoate. Orally, it was necessary to give five times the amount of stilbestrol, in contrast to a ratio of 20:1 in terms of rat units for the natural estrogens. In other words, stilbestrol is twenty per cent effective when given by mouth, the natural estrogens only five per cent. This ratio applies to human beings as well as to experimental animals. As yet, there is considerable divergence of opinion regarding optimal dosage. For example, Novak² states that the dosage should be held at the lowest effective level and that it is rarely necessary to employ more than one mg. daily; while Weed³ and his associates, of Tulane, recommend an initial dosage of at least one mg. three times daily. Geist and Salmon⁴ used one to five mg. three times a week by injection and three to five mg. daily by mouth. In a series of thirty-eight menopausal cases, they report toxic effects in twenty per cent and state that headaches and nervousness were not strikingly relieved. Dunn⁵ has treated young women suffering from pri-

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mary amenorrhoea with five mg. of stilbestrol daily for from fifty to sixty days. Von Haam and associates⁶ in a series of 125 patients, used daily doses of from 0.2 mg. to 0.5 mg. orally and 1.0 mg. parenterally twice weekly. In forty-two per cent of the patients some untoward symptoms appeared during the treatment. Mazer, Israel and Ravetz reported a series of 189 patients, with toxic reactions in fifty-two per cent receiving 2.0 mg. by injection every fourth day, in 21.3 per cent of patients taking 2.0 mg. orally and in only three per cent when the dose was 0.5 mg. daily by mouth or every fourth day by injection.

In most of the available literature there is no clear distinction between stilbestrol, the original substance designated diethylstilbestrol by Dodds et al, and the di-propionate and di-acetate esters. There seems to be a sufficient degree of difference in toxicity and absorption to warrant this distinction.

SYMPTOMS

Stilbestrol and stilbestrol dipropionate were used in sixty-five cases of menopausal or premenopausal syndrome, two cases of amenorrhoea in young women, in two cases to suppress lactation, in one case each of senile vaginitis, premenstrual headaches and ovarian hypofunction. Three of the menopausal cases discontinued treatment and two others could not be followed up, so that the statistics quoted here apply to sixty cases, except for the summary on toxic reactions in which all cases have been included.

The order of frequency of symptoms corresponds rather closely with the symptoms tabulated by Hawkinson⁷ in a series of 1000 cases, with one exception, headaches and occipito-cervical aching were complained of relatively more often in this series and rose in order of frequency to sixth and seventh place.

In addition, vaginitis was present in eleven cases or eighteen per cent. An interesting observation was that the trochanteric fat pads usually associated with ovarian deficiency were observed in every one of these cases. The average age of patients was 45.35 years, the youngest twenty-seven, and the oldest sixty-five years.

When a patient complaining of menopausal symptoms is first seen, a careful history should be taken, a complete physical and pelvic examination made and laboratory tests done in order to rule out anemia, cardiorenal or cardiovascular disease, hypertension and thyroid conditions. In these patients, the physician has a great opportunity to practice preventive medicine with respect to malignancy of the generative organs. The chance to correct predisposing conditions, such as cervical erosions and infections, should always be kept in mind. Biopsy of suspicious cervical lesions is always indicated before actual therapy is begun.

In treating the menopausal patient, the general practitioner should familiarize himself with the vaginal smear method first described by Papanicolaou and Shorr and later simplified by Geist and Salmon.⁸ The technique is very simple. A speculum is inserted into the vagina and the vaginal mucous membrane and cervix inspected for evidence of infection or other abnormalities. On withdrawing the speculum, there will be almost invariably a small amount of vaginal secretion on the posterior blade of the speculum sufficient to make a smear. This secretion is diluted with a little saline, spread on a glass slide, and dried in the air. It may be stained with fuchsin, but methylene blue will do almost equally as well. Diagnosis of estrogen deficiency depends on the type of cells observed in the smear.

ORDER OF FREQUENCY OF SYMPTOMS

Zimmer

1. Nervousness (ninety-three per cent)
2. Fatigue and lassitude (eighty per cent)
3. Flushes or chills (seventy-eight per cent)
4. Menstrual disturbances (sixty-eight per cent)
5. Excitability (sixty-seven per cent)
6. Headaches (sixty-one per cent)
7. Occipito-cervical aching (sixty per cent)
8. Disturbed sleep (forty-eight per cent)
9. Depression and crying (forty-six per cent)
10. Irritability (for per cent)
11. Vertigo (thirty-six per cent)
12. Tachycardia and palpitation (thirty-five per cent)
13. Rheumatic and other vague pains (twenty per cent)
14. Nausea (twenty-five per cent)
15. Abdominal distension (twenty-three per cent)
16. Numbness and tingling (twenty-one per cent)
17. Decreased memory and concentration (fifteen per cent)
18. Frigidity (eleven per cent)
19. Excessive sweating (ten per cent)
20. Formication (ten per cent)

Hawkinson

1. Nervousness, subjective
2. Menstrual disturbances
3. Flushes and chills
4. Excitability
5. Fatigability and lassitude
6. Depression and crying
7. Irritability
8. Disturbed sleep
9. Tachycardia, palpitation, dyspnea
10. Vertigo, scotomas
11. Decreased memory and concentration
12. Headaches
13. Frigidity
14. Numbness and tingling
15. Occipito-cervical aching
16. Vague and indefinite pains
17. Excessive sweating
18. Formication

When the supply of estrogenic hormone is inadequate, the vaginal epithelium atrophies and tends to lose its layer of cornified cells, the amount of glycogen in the cells becomes diminished, and the degree of acidity is lowered. With the progress of atrophy continuing, more and more atrophy cells (or "deep cells," small round cells with deeply staining nuclei) and leucocytes are found in the vaginal debris instead of the large keratinized squamous cells with deeply staining, pyknotic nuclei which characterize smears from the healthy vagina.

On the basis of the cells present in the vaginal smear, classification into four groups is usually made, from three plus deficiency to no deficiency.

Three plus, or advanced estrogen deficiency is characterized by complete absence of squamous epithelial cells and the presence of small, round or oval epithelial cells with rather large, darkly staining nuclei (atrophy cells). These are the cells which Pananicolaou and Shorr have described as "deep cells." Leucocytes and erythrocytes are present in varying numbers.

In two plus, or moderate degree of estrogen deficiency, there is a variable number of large, epithelial cells, many of which are irregular in shape. The nuclei are relatively large. Interspersed among these cells is a varying number of "atrophy cells" and leucocytes. The relative proportion of the large epithelial cells to the "atrophy cells" is variable, but both are present.

In one plus, or slight deficiency, rather large irregular epithelial cells predominate. The cells vary in size and shape, their edges are somewhat irregular and frequently indistinct in outline. They frequently occur in clumps; a few "atrophy cells" may be present.

Where there is no deficiency, the smear consists of large, flat, clearly outlined, squamous epithelial cells with small, deeply staining nuclei. These cells are larger, more clear cut and the nuclei relatively smaller. No "atrophy cells" and usually few leucocytes are seen.

Estimation of the hydrogen ion concentration of vaginal secretion is also said to be helpful. The normal value is about 4.5, but in the presence of estrogen deficiency, rises to 7.0 or above. However, this method was found to be very unreliable and in this series did not parallel the vaginal smears. Some of the most advanced deficiency cases had a normal vaginal pH.

DOSAGE

Mazer and his associates have shown that as little as 0.2 mg. of stilbestrol given daily to a castrated woman maintains a level of estrogen excretion comparable to that occurring in a normal woman during

the week prior to menstruation. Theoretically, at least, some women should be benefitted with less than this amount and in this series, doses from one-eighth to one-fourth mg. daily by mouth were quite adequate in a number of cases. Doses of one-fourth to one-half mg. were used in the majority of cases receiving the drug by mouth, and one-half to one mg. every five to seven days in those patients receiving stilbestrol by intramuscular injection.

On three occasions, 5.0 mg. were given by injection, otherwise the highest dosage used was 1.0 mg. by mouth, and 2.5 mg. by injection.

These dosages are much lower than those formerly recommended in the literature, with the exception of the most recent articles mentioned above and yet the clinical results are at least as good.

Twenty-three of our patients received injections alone, twenty injections and tablets and seventeen tablets alone. The optimal dosage was ultimately determined by trial and error. It is probably best to start with the smaller doses and increase until a satisfactory response is obtained and the patient's tolerance to the drug is ascertained.

Patients should be told early in the course of treatment, that in order to obtain the best results, they should continue after symptoms have been relieved, since insufficient treatment is likely to be followed by the recurrence of symptoms.

Results were classified as very good in twenty cases, (thirty-three per cent); good in thirty cases, (fifty per cent); a total of eighty-four per cent good results. Moderate or slight improvement occurred in an additional seven cases, (twelve per cent); and in three cases, (five per cent) no results were obtained.

Symptoms generally improved within two weeks after treatment was begun. Several patients who had been receiving estrone previously, noticed the change and felt greater improvement when taking stilbestrol. Some had an aversion to injections, almost to the point of phobia, and were very grateful for the relief obtained from adequate oral medication.

Three patients, who had suffered from migraine type headaches for many years, obtained greater relief than they had ever experienced before. However, one of these had recurrence of symptoms one month after stilbestrol dipropionate was discontinued, the other two are still taking the drug by mouth.

Besides the menopausal cases, there was one case of premenstrual headache which was relieved, and one case of senile vaginitis without other symptoms treated by injections with good results. Two or three injections of 1.0 mg. stilbestrol dipropionate sufficed to suppress lactation in two postpartum

cases. In two cases of primary amenorrhoea in young women, 3.0 mg. and 4.5 mg. stilbestrol dipropionate, respectively, administered in three divided doses by injection, resulted in the production of a normal period.

In three cases, subcutaneous implantation of crystalline stilbestrol was tried. Twombly and Millen⁹ report very satisfactory results using intramuscular implants of one or more 20.0 mg. pellets of estradiol. These were inserted through a trocar, size ten French, into the gluteal muscles. These investigators state that the effect of estradiol in pellet form surpasses other forms of therapy and that relief lasted five or six months after a single implantation. Stilbestrol dipropionate is as yet not available in pellet form and in the three cases in this series from 30.0 mg. to 50.0 mg. crystalline stilbestrol was implanted through a small skin incision on the lower abdomen. All three cases had considerable nausea, headaches and griping abdominal pain for from four to six days after implantation, but thereafter felt remarkably well. Relief lasted one month, two months, and four months respectively. In all cases, there was some delayed wound healing, probably due to local toxic effect, with some loss of part of the material introduced. All three patients were sufficiently pleased with the results to volunteer for further experiments when the solid pellets become available for clinical trial. It seems quite possible that after this method of administration has had sufficient experimental and clinical study it may become the method of choice in the future.

There have been a number of reports of success in treatment of arthritis in the menopause with estrogenic substances, but no sound explanation of the mode of action has been given. Five of the sixty cases here reported had coexisting arthritis or neuralgia, and following stilbestrol treatment felt greatly improved. Since these disorders are usually considered to be due to focal infections, it is possible to explain the beneficial effect of stilbestrol if the vaginitis is considered to be the source of infection in these cases. Improvement then is due to the change from a pathological bacterial flora in the vagina to a normal flora which usually follows in the wake of histological changes and the disappearance of leucocytes from the vaginal smear.

TOXICITY

The available reports on the toxicity of stilbestrol are so discordant that it is hard to formulate a definite opinion. However, three more recent articles by Freed,¹⁰ Von Haam and Mazer and their associates, emphasize that the doses recommended previously in the literature have been excessive. Doses up to

twenty times the effective therapeutic dose used in this country have been reported from Europe, with incidence of toxic reactions as high as eighty-seven per cent. Another point which has not been made clear, heretofore, is the difference between stilbestrol and stilbestrol dipropionate. Most European reports seem to deal with stilbestrol alone, yet the dipropionate ester is only one-seventh as toxic as stilbestrol, as will be shown later.

Undesirable side-effects may be classified into two groups, physiologic and toxic. Into the first group fall such effects as proliferation and activation of mammary glands with painful swelling of breasts, vaginal bleeding after cessation of menses (so called withdrawal bleeding to distinguish it from true menstruation) and excessive flow in patients who are still menstruating.

The toxic symptoms are predominantly gastro intestinal; i.e., nausea, vomiting, abdominal pain and griping and even diarrhoea. Headaches and vertigo are sometimes encountered and occasionally skin eruptions (Shorr, Robinson and Papanicolaou). The reason Geist and Salmon found no striking relief of headaches in their series, may be that by using doses of 3.0 mg. to 5.0 mg. daily, toxic headaches at once superseded the original complaint. Although these symptoms are quite disagreeable, they are not in any way seriously harmful and disappear promptly after medication is stopped, or the dose is reduced.

In the series reported here, tender and enlarged breasts were encountered twice. Vaginal bleeding occurred in two cases (five years after the last menstruation) and in one case, was rather severe, but required no corrective measures. One woman, who was still menstruating, had such excessive flow that several injections of testosterone propionate had to be given.

Toxic reactions were slight or fleeting nausea, severe nausea and vomiting, abdominal pain and griping, headaches and vertigo. Seven out of nineteen patients receiving stilbestrol had some sort of reactions, mild or severe, and two discontinued treatment. Three of the remaining five patients had no reaction on similar doses of stilbestrol dipropionate. Thirty-seven per cent of stilbestrol treated patients exhibited side effects of some nature.

One out of sixty-nine patients receiving stilbestrol dipropionate discontinued treatment, two had mild nausea and cramps, one moderate nausea after oral administration, but not after injections, making a total of 4.5 per cent reactions in patients treated with stilbestrol dipropionate.

Thus there is a marked difference in the incidence of toxic reactions between stilbestrol and stilbestrol dipropionate.

There is no clinical or experimental evidence that stilbestrol or related substances cause tissue damage when used therapeutically, even when dosages much larger than ordinarily used are employed. Dunn reports one case in which the administration of 480.0 mg. produced no signs of toxic effects. Freed and his associates checked the alleged hepatotoxic action of stilbestrol with the bromsulphalein retention tests and found that in not a single instance was the bromsulphalein retention greater after stilbestrol treatment than before. Furthermore, relatively huge doses did not cause pathologic changes of liver or kidneys in rats. Von Haam and associates draw the same conclusions in a recent article. Mazer, Israel, and Ravetz made exhaustive laboratory studies on ten patients receiving as much as 825.0 mg. of stilbestrol over a period of as much as one year. The tests carried out on these patients were: B.M.R., blood counts, bleeding and coagulation time, hippuric acid excretion, urinalysis, alkali reserve, blood sugar, urea nitrogen, creatinine, blood uric acid, blood cholesterol, calcium, chloride, phosphorous, total protein, albumin and globulin. The results showed no significant alterations.

In rats and rabbits the daily injection of 0.5 mg. per kilogram for a period of forty-two days produced cloudy swelling in liver, kidneys and spleen. This dose corresponds to a daily dose of about 30.0 mg. by injection in the human being, which is more than 100 times the usual therapeutic dose. It must be remembered that the natural estrogens also produce tissue damage in experimental animals when given in comparable doses.

The same investigators found that stilbestrol, like the natural estrogens, markedly reduce the insulin requirement of diabetic patients through inhibition of the diabetogenic hormone of the anterior pituitary. In this connection it may be said that there seems to be a qualitative difference in the inhibiting effect on the individual hormones of the anterior pituitary. Whereas, the inhibition of the anterior pituitary gonadotropic hormone is most marked, Noble found that it was more difficult to inhibit growth in young rats.

The alleged carcinogenic action of stilbestrol should be mentioned briefly. This same question has been raised before, after it was found that the natural estrogens could produce cancer of the breast in a susceptible strain of mice. Yet there has never been a single case reported of cancer which could be attributed to estrogenic therapy. In this series there was one woman previously operated on for carcinoma. She did not show any evidence of reaction of the tumor.

CONCLUSION

Stilbestrol and stilbestrol dipropionate* have a definite place in the treatment of menopausal disturbances and other estrogen deficiency states. Ease of administration and economic advantages make these drugs an outstanding contribution to our therapeutic armamentarium. Toxic reactions are occasionally encountered and are much more frequent after stilbestrol than after stilbestrol dipropionate. They are annoying, but harmless, and certainly of no importance when compared to the side-effects occasionally following the use of sulfonamide drugs. There seems to be no valid reason for withholding the drug any longer from general use.

SUMMARY

Ever since the value of the steroid estrogenic hormones in the treatment of the menopausal syndrome and other allied conditions has been established, clinicians and biochemists have been searching for an effective synthetic product which would give equally good results when administered orally. Stilbestrol, synthesized by Dodds in 1938, has been used extensively in Europe, but to a lesser degree in this country, because of its reported toxicity and undesirable side effects. Available reports show a divergence of opinion in regard to toxic effects as well as therapeutic doses used. This study aims to contribute to the clinical data and evaluation of stilbestrol. The drug was administered altogether to seventy-two patients. Results are reported on sixty of sixty-five patients with menopausal or premenopausal syndrome and a few cases of other conditions. Results are good in a majority of cases and in this series toxic side effects were encountered less often than reported in the literature. In general, stilbestrol is more apt to cause untoward side actions than stilbestrol dipropionate after either intramuscular or oral administration. Symptoms encountered in this series are tabulated as to frequency and compared with those of other reports. Diagnosis was usually confirmed by the vaginal smear method of Papanicolaou. The hydrogen ion concentration of the vaginal secretion was found to be unreliable and frequently did not correspond to degree of estrogen deficiency present.

A number of patients who had been treated with natural estrogens before, noticed the substitution, and some of these remarked about the improved results under stilbestrol therapy. Doses employed were generally smaller than those reported in the

* Acknowledgment: The Stilbestrol preparations used in this study were furnished by the Department of Medical Research of the Winthrop Chemical Company, Inc., and this material assistance is hereby gratefully acknowledged.

current literature which probably accounts for the smaller incidence of untoward side effects.

In one case vaginal bleeding reached alarming proportions but subsided after discontinuance of the drug. In one other case testosterone propionate was used to check the excessive flow. Incidence of other toxic manifestations is discussed and the recent literature pertaining to them is reviewed. No bad effect was noticed in one patient previously operated for carcinoma. Subcutaneous implantation of crystalline stilbestrol was tried in only three cases and although the results were not particularly impressive, this method may come into greater use in the future. The clinical observations in this series corroborate conclusions of Mazer and his associates as well as others, that stilbestrol is a highly active estrogenic substance and may be safely administered if the therapeutic dosage is not exceeded. Toxic reactions are relatively unimportant and certainly not as serious as those encountered following use of the sulfonamide drugs in infections. Because of the ease of administration and economic advantages it is hoped that stilbestrol will soon be officially recognized and made available for general use.

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Although the problems of military field sanitation are important and complicated, "they are less serious and less difficult to solve than are some of those created by contact between the troops and the civilian population," W. A. Hardenbergh, Colonel, Sanitary Corps, United States Army, Washington, D. C., declares in the July-August issue of War Medicine, published bimonthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington.

For the solution of these problems, Col. Hardenbergh says, "efficient local and state health departments are needed, with the fullest and most sympathetic cooperation given and received at all times. The present arrangements contemplate such cooperation, with an officer of the United States Public Health Service acting as liaison officer, in order that the fullest possible health protection can be obtained by the joint action of all agencies engaged in health work."

IRON DEFICIENCY ANEMIA*

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The problem of iron deficiency anemia is not a new one. Its history is old and most interesting. Chlorosis, one example of iron deficiency, first appeared in the sixteenth century and was wide-spread in Europe. Since then it has disappeared quite suddenly several times only to reappear later. Richard Cabot tells of its passing from the wards of the Massachusetts General Hospital at the turn of the last century. This observation was also made by many others in England, Germany and Scandinavia.

The medical profession can claim no credit in first describing the disease. This was done by one of the finest clinical instruments, the mother's eye. The high born ladies of the old Netherlands watched their marriageable daughters droop and their cheeks fade, even though their hearts beat vigorously behind their iron corsets. These ladies called their daughters' malady the green sickness or the love sickness, though fever rarely accompanied it. The first medical description must be credited to Pieter van Forest in 1546 and Johannes Lange in 1589. In chlorosis, as was also the case with syphilis, another disease widely spread at this time, the remedy was quickly found. Who it was that deserves this credit is not known to us.

Sydenham and Willis, in the seventeenth century, described the efficacy of iron treatment in chlorosis. In 1746, Menghini placed the use of iron on a sound basis by showing that this element is a normal constituent of the blood and that it is found in the protein fraction. The splendid paper by Heath and Patek in 1937 did a great deal to clarify some of the problems of iron deficiency¹.

An iron deficiency anemia is one in which the concentration of hemoglobin in the erythrocytes is less than normal or the amount of hemoglobin per cell is less than normal. The red cells are hypochromic and generally microcytic.

The types of anemia recognized as due to iron deficiency are:

1. Hypochromic or nutritional anemia of infancy and childhood.
2. Chlorosis or the hypochromic anemia of girls.
3. Hypochromic anemia of pregnancy.
4. Hypochromic anemia of blood loss.
5. Idiopathic hypochromic anemia, or Plummer-Vinson Syndrome^{1a}.

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These anemias occurring at different ages and under varying physiological and pathological conditions are all due to the same essential cause, namely iron deficiency, either from lack of iron as in the breast fed infant or loss of iron due to hemorrhage. This concept has done much to make for better understanding of these anemias and bring health to those who did not know what it was to feel well.

IRON METABOLISM AND REQUIREMENTS

Comparatively little is known of the chemistry and formation of hemoglobin, but research has made some facts known to us. Hemoglobin is a protein composed of two molecules. The large molecule, globin, is linked with the smaller iron-containing molecule, heme. The body is able to furnish all the factors necessary for the formation of hemoglobin under normal conditions. It is now thought that the pyrroles, which form an essential part of heme, can be synthesized by the body. However, when a demand for extra iron is made, it must be met either from stores laid down in the body or from sources outside the body. If these demands are not met, the inevitable result is iron deficiency anemia.

Iron is present in the body in very small amounts even though it is found in all the cells and is most important. There are about 2.7gms. of iron circulating in the blood as hemoglobin iron, about 0.3 gms. as functioning tissue iron, and approximately 1.3 gms. as stored iron for emergencies. This gives a total of 4.3 gms. of iron in the body^{1b}.

An erythrocyte with a normal volume of ninety cubic microns contains about thirty micromicrograms of hemoglobin. Thus one-third of the normal cell mass is hemoglobin. This is full saturation of the stroma as is shown by the fact that this concentration is never higher. Haden states that approximately 100 milligrams of iron are needed for the trillions of erythrocytes which must be formed each day to keep the blood in equilibrium. About eighty-five milligrams of this comes from iron set free by the death of red cells. Most food contains only minute amounts of iron, so that the margin of balance is small on an average diet. During growth, pregnancy and lactation additional amounts of iron are needed². The average person may lose half his blood by hemorrhage and restore the normal blood picture by calling on the body's iron reserve. This may be done only once. Further hemorrhage will cause an iron deficiency anemia to develop. Tacitus describes the case of Paulina, wife of Seneca, in whom a single hemorrhage resulted in an anemia lasting the rest of her life.

The absorption of iron takes place largely in the duodenum, the metal being in the ferrous state. The

absorption of iron is greatly influenced by the amount of HCl excreted by the stomach. Achlorhydria disrupts the absorption of iron. There are probably other factors entering this process, but their action is not proved. There is much work that suggests that the stomach secretes some other substance than HCl which influences absorption. Thus because of the above factors, intake may be sufficient, but absorption may not. Finally, iron may reach the bone marrow in satisfactory amounts but not be utilized. Many factors interfere in the integration of iron into hemoglobin. Lead poisoning is associated with a hypochromic microcytic anemia. Nephritis, also, exercises a like interference with iron utilization. Myxedema, severe infection, and probably nutritional imbalance associated with vitamin B and C deficiency are responsible for many failures in treatment.

Late work in the metabolism of iron by Fowler and Barer³, Brock and Hunter⁴, and Reimann et al⁵, shows that iron is a "one way" metal, that is, it can enter the body but it cannot be excreted in significant amounts, without blood loss. Thus we can disregard loss of iron from the body except by hemorrhage or chronic blood loss. In the etiology of iron deficiency anemia we have only to consider the intake of iron in the food, the loss of iron by bleeding, and the demands of the body for iron during growth and pregnancy.

PREVALENCE

With these thoughts in mind, we should expect to find iron deficiency a common condition, and indeed it is. Abbott and Ahmann found in Florida that of 883 rural school children examined, fifty per cent were definitely anemic and thirty-one per cent showed border line anemia⁶. Iron deficiency anemia was found in sixteen per cent of the women admitted to the medical wards of Boston City Hospital. In an excellent survey in Scotland by Fullerton, Davidson, and Campbell, iron deficiency anemia was found in thirty-two to forty-one per cent of the children, sixteen per cent of the adolescent girls, and forty-five per cent of the adult women. Mackay⁷ reported that more than two-thirds of London women of the hospital class showed anemia, and largely due to iron deficiency in her opinion. This condition may occur where ever there is malnutrition and may follow any acute hemorrhage or chronic blood loss.

CLINICAL TYPES

The types of iron deficiency anemia merit some individual attention.

1. The hypochromic anemia of infancy and childhood is primarily caused by the excessive demand

for iron needed in growth. Contributing factors are inadequate iron endowment from the mother, prematurity or multiple births, in which iron reserves may be small, the iron-poor diet of the breast fed, sickness with resultant poor appetite, and gastro-intestinal disturbances and achlorhydria interfering with iron absorption.

2. Chlorosis is now a rare condition. Most of us here have never seen a typical case. It is regrettable that its true nature has not been determined, but this will be accomplished if it reappears. It is not generally thought, now at least, that chlorosis was due to living in garrets, tight lacing and the reading of unhealthy literature. Poor hygienic and eating habits were responsible, however, for many cases. Mild anemia is very common in girls after puberty and it responds readily to iron therapy. In these young girls, early and abnormal menstruation, rapid growth and achlorhydria are the most important factors. If there is no excessive menstruation, search for blood in the gastro-intestinal tract and elsewhere should be carried out.

3. Hypochromic anemia of pregnancy is a common finding. In any normal pregnancy there is a reduction in hemoglobin. This is due to an increase in the circulating plasma and is called a true physiological anemia by many. This normal reduction in hemoglobin is about ten per cent. In pregnancy there is often a decrease in gastric secretion and an iron deficient diet is almost the rule. The fetal demands for iron are partly met by the absence of menstruation. A hemoglobin between fifty to sixty per cent is an indication that the woman was anemic before her pregnancy or that infection, toxemia of pregnancy or blood loss is present.

4. The hypochromic anemia of blood loss is self-explanatory. So far as our subject is concerned, to bleed means to lose iron. If the bleeding stops and the iron supplies are adequate, the hemoglobin will return to normal without outside iron. If the bleeding continues and the iron reserves are depleted, the anemia will develop rapidly even though the blood loss seems insignificant. If the blood loss is now stopped, the anemia will persist because the materials needed to manufacture hemoglobin are lacking in part. The anemia will persist until the intake of iron is adequate. It is important to remember that no iron is lost in hemorrhagic effusion; the blood is broken down and the iron is returned to the body stores. Gastro-intestinal and uterine hemorrhages account for most of the severe anemias in this group, and on a world-wide basis, hookworm infestation is the most common cause.

5. Idiopathic hypochromic anemia⁸ is a most interesting clinical picture. There are findings

in this condition usually lacking in the other types of iron deficiency. The patient is a woman of middle life with mousy hair and pigmentation of the neck and chest. Beside the usual signs and symptoms of anemia, there are marked epithelial changes in the pharyngeal mucosa, the tongue is denuded of papillae and often sore. Painful fissures are often present in the corners of the mouth. Achlorhydria and atrophy of the gastric mucosa are the rule. The finger nails are characteristically brittle and flat. They may be spoon-shaped, which finding is regarded as diagnostic by many. The term idiopathic is still used by many because often there has not been or does not seem to be any blood loss. Mild splenomegaly is present in about sixty per cent of the cases. Heath and Patek list the etiology in sixty cases as follows⁹:

	Per Cent
Deficient in iron.....	62
Achlorhydria	75
More than four pregnancies	47
Pathological blood loss	88
Menorrhagia	62
Hemorrhoids	23
Epistaxis	15
Other sources	15

DIAGNOSIS

Any anemia with a low color index, normal to low normal leucocyte count, with erythrocytes microcytic in size and hypochromic in color with no obvious cause for anemia, as uremia or severe infection, is probably an iron deficiency anemia. A color index alone of 0.6 or less certainly indicates iron deficiency. Generally close questioning will reveal some type of blood loss as from a peptic ulcer, from the uterus, rectum or excessive menstruation. To often to be disregarded, this type of anemia may be the only finding of a right sided intestinal carcinoma. Frequently it is far more important to correct or alleviate the lesion causing the blood loss than it is to treat the anemia.

TREATMENT

When a complete diagnosis has been made, treatment may be started. A complete diagnosis does not mean a diagnosis of iron deficiency alone, but an understanding of how the iron deficiency developed as well. It is imperative that each case be fully investigated before treatment is instituted, for a satisfactory response to iron may produce a false sense of security in the medical attendant in the presence of cancer or some other condition which may prove fatal. Here the test for occult blood in the feces comes into its own for it may be the only way the blood loss may be detected.

The main indications in treatment are two: First, to arrest the blood loss if possible; second, to replenish the patient's iron stores.

It should be remembered that twenty-five milligrams of iron are needed to produce a rise of one per cent in hemoglobin, so if five milligrams are absorbed and utilized per day, it will take five days for the hemoglobin to rise one per cent, and fifty days to rise ten per cent^c. Therefore many months may be needed for treatment of severe iron deficiencies. When there is achlorhydria, the use of dilute HCl may mean the difference between success and failure. In uncomplicated cases, adequate dosage of inorganic iron by mouth will result in a rise of one per cent and occasionally three per cent per day.

Patients with a hemoglobin below sixty-five per cent should be in bed, for it is in this group that there is a high percentage of refractory cases. The prophylactic use of iron in the pregnant woman is recommended because of its beneficial effect on the mother and offspring.

The minimal oral effective dose of any iron preparation has been defined as the dosage necessary to cure the great majority of cases. This means of assay is not satisfactory but it is the only one available. There is general agreement that the bivalent ferrous salts are more effective than the trivalent ferric salts. However, that a sufficient amount of iron is given is more important than the form in which it is administered. The parenteral use of iron is seldom justified as the therapeutic dose is so close to the toxic dose. Twenty-five milligrams may cause nausea.

COMMON PREPARATIONS IN USE

Ferric and ammonium citrate, six gms. daily, is given in capsules, aqueous solutions or syrups. In solutions the teeth must be protected by the use of a drinking tube.

Reduced iron, three gms. daily, is less effective therapeutically, but the actual dose is smaller in bulk and gastro-intestinal symptoms are uncommon.

Ferrous carbonate, four gms. daily, is given in 0.3 gm. pills and should be freshly prepared because oxidation to an insoluble form may occur.

Ferrous sulphate, one gm. daily, is given in pills. It may cause gastric irritation.

Ferrous chloride, 0.5 gm. daily, which gives a high percentage of retention and utilization, may be given in capsules or as a simple syrup.

Now one final word as to treatment. Do not let any one tell you that he cannot take iron, that merely means that he will not. If the usual dose of iron does not give results, double the dose. Enteric coated tablets may save the patient some discomfort.

Some of the pharmaceutical houses are enjoying splendid business from the sale of anemia remedies which they feel will benefit any anemia, either nutritional, iron deficiency or pernicious. The great majority of such preparations are shot gun mixtures of two or more ingredients. More than one hundred preparations of this type have been advertised to the medical profession in the last few years, many of them are "best sellers," and the gross sales of one is reputed to be around three million dollars a year.

In most of these preparations the ingredients are doubtless therapeutically active and if given in a large enough dose to supply a sufficient quantity of the particular material needed will yield satisfactory results. The huge volume of these preparations consumed is less a tribute to their potency than to the clever way in which they have been advertised and promoted. They direct appeal to those physicians who can not make blood examinations themselves and are unwilling to refer patients to others for this purpose. A circular advertising one such preparation states that it is designed for the oral administration of all types of anemia which respond to liver therapy or the use of iron salts. Capital is made of any statements in the literature about the advantages of these products. Liver never helped an iron deficiency other than by its high iron content, and there is no doubt that iron is ineffective in the treatment of pernicious anemia. Treatment, therefore, will be more effective and less expensive if a definite diagnosis of the anemia is made¹⁰.

SUMMARY

1. An effort has been made to demonstrate that iron deficiency anemias are due to nutritional demands in the young, and due to blood loss, past or present, in the adult.

2. Inability to explain an iron deficiency is a reflection on our thoroughness and should act as a spur to our diagnostic zeal. Any patient whose erythrocyte count and hemoglobin have been restored to normal by the use of iron, only to fall again after treatment is stopped, is still bleeding. This blood loss must be located.

3. Some therapeutic suggestions have been made.

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DENTISTRY AS IT PERTAINS TO MEDICINE*

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This paper will attempt to restore the mouth to the human body from which it was virtually separated one hundred years ago. In order to do this we should, perhaps, look back across the pages of dental history and review, briefly, the steps that have led up to the present status of dentistry as a branch of the healing art. In 1630 American dentistry had its birth when the Massachusetts colony brought in three barber-surgeons who provided the only dental service available to the colonists. There is no further record of dentistry in this country until 1735 when a man by the name of Mills, a wig maker in New York advertised to extract teeth. From then to the opening of the nineteenth century, many men came from Europe who were more or less skilled in the art of dentistry as it was practiced then. The first dental school was the Baltimore College of Dental Surgery established in 1840, which I had the pleasure of visiting last September. In August of 1834, the first dental society was formed in New York. The American Society of Dental Surgeons, which is the present American Dental Association was organized in 1840. Within this period of less than six years—1834 to 1840—dental organization, dental journalism and dental education all had their origin. On this foundation, dentistry began the building of a profession which, last year, celebrated its 100th anniversary.

I shall not take the time to recite the accomplishments of American dentistry since those early days a hundred years ago. You are all more or less familiar with them. Instead let me call your attention briefly to some of the unfinished tasks of the present and those also that are bound to present themselves in the future. The first thing that impresses me as I look back over 100 years of American dentistry is that dental ills have not been materially reduced. They are still almost universal. We have not, with all our boasted progress, learned their cause or how they can be prevented. This is not to be taken as a reflection on the profession. The same is true in the medical profession. After spending millions of dollars, the causes of cancer and common colds still remain a mystery.

This brings to my mind the subject of research. Some way must be found to check dental disorders

at their source before anything approaching complete success can be hoped for. The problem of dental care for all the people can never be solved by present methods of dental practice. Dental diseases differ from other ills in that they create conditions that are, to a certain extent irreparable. Teeth and the tissues which support them do not possess the power of self-repair. This means that early detection of dental disease is of supreme importance in its control. You as medical men can do a great deal toward solving this problem by helping us to a greater cooperation on the part of the public.

I have said that if we are ever to achieve prevention, then a way must be found to check dental disease at its source. This can only be done by a long range program of research, and since all research in dentistry as in medicine, is carried on in the interest of the public, it is the public that should support it. This it has not done for dental research. Millions of dollars have been spent for related fields of medicine with almost no part of it given for research in dentistry. The A. D. A. has expended a great deal of money for research, most of which has been contributed by the profession itself. On this particular point I was interested in a recent editorial in one of our larger newspapers. The editor had this to say and I quote, "If teeth are guilty of all the evils charged against them, why aren't dentists equipped to find the cause and get rid of it?" "The answer is," and I'm still quoting, "that dental schools are not endowed or equipped for postgraduate and research work. They are the neglected stepchildren of science. Even the instructors for the most part practice on the side to get a living. Brilliant young men who need backing for cancer research usually find it, but who will support one who wishes to spend his life discovering the mysteries of teeth? It is a queer civilization that endows dog hospitals and will not spare the money to discover why bad teeth cripple its people." I bring this phase of the subject to your mind to arouse in you an interest in the betterment of dentistry as a health measure for all the people. Let me emphasize another part which you as medical men can take in connection with the source of dental disorders. You should realize that you are responsible, in large measure, for dental disease. You are the ones who are responsible for the care and feeding of the pregnant women and the small children. A great many dental troubles are started before birth and in early childhood, when mothers and children are entirely under medical supervision. If the prospective mother is brought by the physician to realize, both for her own general health and that of her child, the necessity for dental care, there will be a far better chance of elimination, at the source,

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the most common cause of dental disease. There is absolutely no truth in the proverbial saying "Every child costs the mother a tooth." The chances for our children having healthy teeth are much better than they used to be if necessary precautions are taken.

The physician should see to it that the expectant mother consult her dentist regularly and also that she is supplied with sufficient materials to build good teeth. About ten per cent above her normal need is usually sufficient.

In the care of the child after birth the physician should instruct the mother to have the child taken to the dentist at frequent intervals while the deciduous teeth are erupting. There is usually not much to be done, but it does give the dentist a chance to gain the confidence of the child and the parents which is valuable later when work does have to be done.

Let me say, from a dental standpoint, that neglect to give proper instructions in prenatal and postnatal care is definitely a shortcoming on the part of medical men. Dentists do not, as a rule, come into the picture until the damage is done and the patient is well on the way to becoming a dental cripple.

Please do not misunderstand these remarks and interpret them as an attack on the medical profession. They are intended as a plea for fuller cooperation that the public may be better served.

If the physician brings the child this far along then the dentist should assume the responsibility for the proper care and development of the teeth and the maintenance of the highest physiological oral condition possible.

Will the dentist assume that responsibility? I believe that he will because gradually the basic medical sciences have been added to the dental curriculum. Gross anatomy of the entire body should be taught the student of dentistry in a limited degree, but anatomy of the head and neck should be given to him in much detail. Physiology should be taught to the extent that the dentist should have a clear conception of the functions of the various organs and systems of the body. He should have sufficient knowledge of pathology to understand the process of disease. If the dentist is to assume the role expected of him by the public, he should have a broad knowledge in the matter of diet as it concerns disease and health.

The longer I practice dentistry, the more convinced I become that dentists and physicians can and must cooperate more fully if we are to combat successfully the numerous modern diseases.

In many instances the two fields are very closely linked. In such diseases as infective arthritis, neuritis, migraine, ulcerative stomatitis and colitis, as

well as stomach ulcers, gall bladder disease, nephritis, malnutrition and a host of others, any attempt at eradication would be unsuccessful unless the physician and dentist cooperate fully.

What do you as physicians expect of the dentist when a case is referred for treatment? In analyzing this question, I would say that you:

1. First expect a mouth either clean or in the process of being cleaned: teeth properly scaled and good clean surfaces where particles of food, bacteria and tissue debris cannot accumulate with ease.

2. Then you will want healthy gums tight to the gingivae of the teeth and not soft, spongy inflamed gums which harbor all kinds of bacteria.

3. Third you will want simple but effective restorations which fit with ease and comfort and which do not serve as a source of nervous irritability.

4. Fourth you will want sufficient x-ray to be reasonably sure that no infection exists at the apices of the roots or in the tissues surrounding the teeth. Finally you will want a dentist who is not prone to extract teeth wholesale.

Extracting many badly infected teeth at one time is unwise because:

1. It opens the way for an overwhelming rush of bacteria into the bloodstream. If the patient's resistance is low, this may cause a bacteremia or septicemia.

2. It removes an excellent source of autovaccination. Repeated small doses of bacteria in the blood stream from one or two infected sockets act the same as vaccine therapy. If the extraction of a large number of infected teeth from the same patient are spread over a period of several weeks, more can be accomplished than with good vaccines of the same source.

This brings up the subject of focal infection and its relation to systemic disease which has been a much talked of subject in the past decade. Considerable confusion still exists in the minds of both the medical and dental professions as to the effect of dental sepsis on health. This confusion is, in a way, justified. In my experience, many cases referred to me by the physician showed complete relief or marked improvement in their general condition after elimination of dental infection. On the other hand I have seen patients with what seemed to be exactly the same condition get absolutely no relief by the same procedure. Many cases have occurred in my own practice where removal of infection has entirely relieved a condition and also many where removal did absolutely no good. In a good many of these cases that did not clear, I believe that a secondary focus remained in some other part of the body. Many members of both the professions who,

at first, were dubious about the focal infection theory have had experiences which have altered their former opinions.

When asked by a patient if the removal of infected teeth will cure a particular type of disease, whether it involves kidneys, heart, or the joints, most of us have learned to make few predictions. It is so much better to tell the patient that these are bad teeth and that they should be removed whether they are causing this condition or not with the hope that he will be directly benefited. I have actually had medical men call me and say, "I have so and so here in my office and I'm sending him over to have such and such teeth jerked out. He has rheumatism and those teeth are causing it." I believe you will agree with me that that sort of conversation is neither professional nor fair to either the dentist or the patient. You have promised the patient that the removal of those teeth would cure him, and you have also told the dentist what he should do instead of letting him be his own diagnostician. If you are referring a patient to the dentist, you should have confidence enough in his ability to diagnose the case or else not refer the patient to him.

Many opinions exist on the question of focal infection, but to show that a close relationship does exist between dental infection and systemic disease I quote from some of the medical consultants in various sections of the Mayo Clinic regarding dental sepsis in their particular fields.

Dr. George B. Eusterman, in the section on Gastro-Enterology says, "While the actual cause of chronic peptic ulcer still appears to be an obscure one, I think that the clinical, experimental and pathologic evidence is sufficient to say that foci of infection can give rise to the following conditions: gastric submucosal hemorrhage, and hemorrhagic erosion, which may be symptomless other than giving rise to gross bleeding; acute ulcers of the stomach, acute and subacute gastritis, which may also give rise to symptoms and signs simulating peptic ulcer, even hemorrhage; subacute ulcers of the stomach and, in many cases, indigestion, which may or may not simulate ulcer and which may disappear with the removal of the infection. I feel that dental infection may be the actual starting point of ulcer, but other factors must be present to make it chronic. He continues—"I do not see how any conscientious practitioner, in the light of present knowledge, can ignore the importance of dental infection in the presence of disease of the upper part of the digestive tract. If he assumes any other attitude, I feel that he is doing an injustice to his patients and to medicine in general."

Dr. J. A. Bergen says regarding the lower part of

the digestive tract, "There are a number of conditions of the intestinal tract that are related to dental infection. Foremost among these is the streptococcal type of ulcerative colitis. Here the relationship has been clearly shown both experimentally and clinically. Removal of periapical infection and perhaps even the removal of pulpless teeth are of great importance in many cases. Other less serious conditions, even the presence of an irritable bowel are affected favorably by the care of the mouth."

Dr. C. H. Watkins of the section on Clinical Hematology said, "So far as dental infection is concerned, removal of a definite focus will, I think, result in improvement in certain types of anemia which are resistant to treatment. We have seen this occur in numerous cases. It seems to me that the most important thing is a thorough understanding of blood conditions which usually have their initial manifestations in the mucous membrane of the mouth. This would permit an early diagnosis and, in most instances, a great deal of improvement may be obtained."

Dr. W. L. Benedict, Ophthalmologist, says, "Some forms of eye disease that formerly were believed to be due to autotoxemia, injury, blood disease or rheumatism have been demonstrated to be due to the actual presence of bacteria carried to the eye from suppurative foci about the teeth. The barrier that nature erects in defense of the eye may be effective against a specific strain of organism, and since organisms about the teeth multiply in kind as well as in number, the fact that an eye becomes diseased in a person whose mouth has been the harbor of pus-producing foci for years indicates that this barrier has been broken down, that his resistance has been lowered; or it may mean that a new organism has been introduced against which no barrier has been erected."

Attacks of eye disease from dental sepsis may be of any degree of severity. Mild attacks of conjunctivitis or iritis may occur which amount to no more than a transient type of hyperemia of the conjunctiva. A rapid succession of mild attacks extending over a period of several years has been demonstrated to be due to dental sepsis.

Dr. C. H. Slocumb of the section on Rheumatic Disease said, "Removal of infected foci, including infected teeth, is justified in all patients suffering with arthritis and if the arthritis is difficult to control, the removal of questionable teeth and dental roots should be advised."

Dr. Paul Oleary of the section of Dermatology says, "A significant point in regard to focal infection as it applies to our particular field of medicine is the importance of removing infected teeth as well

as cleaning up the mouth and removing poor and extensive restorations. The presence of pyorrhea infection and a tremendous amount of metal in the mouth is a great factor in various degrees of salivation from mercury as well as deposits of bismuth following intra-muscular injection of bismuth preparations. Accordingly it is our practice to have all foci of infection treated locally or removed."

Dr. G. J. Thompson of the section on Urology states, "The relationship of infections in the Genito urinary tract to focal infection elsewhere in the body, particularly infected teeth, is quite definite."

"Such infections seem to be an acute manifestation of a previously existing chronic infection and the acute flare-up is undoubtedly evidence of the relationship. Chronic infections in the prostate, bladder and kidney will often not respond to treatment until dental infection has been eliminated. Unfortunately many urologists either are not familiar with these facts or are loath to believe the important part that dental sepsis certainly plays in urologic conditions. Any effort that dentists make to call these facts to the attention of the general practitioner of medicine is very worth while."

Dr. E. C. Rosenow — Division of Bacteriology says, "Dental foci of infection, even though symptomless, are a common cause of systemic disease beyond a question of a doubt."

I have quoted you these statements so that you will realize that this plea for better cooperation between medicine and dentistry comes not entirely from the dentists. We must have this close cooperation in matters clinical and scientific if the problems of medicine and dentistry are to be solved.

At the present time the dental profession is willing and eager to cooperate in all the ways mentioned. The future of both of our professions is at stake and we must present a united effort to combat incompetent clinics, government control and uninterested or uninstructed members within our own ranks.

The dentists responsibility in cancer control is very great. The oral cavity is one of the important sites for the development of neoplasms. Four and five-tenths per cent of all cancers are said to be in the oral cavity or on the lips.

While, of course, there is no definitely known, or accepted cause of cancer, all authorities will agree that the growth of the neoplasms are preceded by a long period of chronic irritation accompanied or followed by cellular hyperplasia.

Of all cancers, perhaps, those of the mouth are the most preventable. Badly decayed teeth with jagged edges against which the tongue, lips, and cheek are constantly rubbing act as chronic irritants. Pyorrhea with accumulation of large amounts of calculus and

with the mobility of the teeth may cause a low-grade irritation.

Failure to replace missing teeth causing malocclusion may be the cause of food impaction areas.

Faulty restorations such as crowns, fillings, bridges and dentures are sources of irritation and are factors in the etiology of cancer. Irritation may result from excessive pipe smoking and predispose to cancer of the lips. The dentist is often the first to see these patients because they associate any lesions in the mouth with the teeth. The responsibility to know and to diagnose early cancer in the oral cavity is something the dentist must not avoid.

Failure to recognize these early lesions permits them to grow and invade the lymph channels and often the blood stream and finally to other organs of the body. Only early diagnosis and treatment will increase the permanent cures of cancers of the oral cavity, and it is definitely the duty of the dentist to be able to detect these early manifestations and to see that the patient gets proper medical care.

Ninety-nine of 100 American hospitals were founded within the lifetime of many persons still living today, Richard H. Hutchings, M.D., Utica, N. Y., states in the March issue of *Hygeia*, The Health Magazine.

"Our grandfathers got along without hospitals very well, or so they thought. In those days nursing was the concern of the women of the family and was accepted as their duty. If attention should be needed at night, friends and neighbors took turns in sitting by the bedside.

"In the early decades of the last century hospitals were to be found only in American seaport cities. These were the most populous centers and here existed the greatest wealth, the direst poverty. With little or no supervision of immigrants, many of the less fortunate were unable to provide for themselves when ill. Here also were to be found the homeless wanderers, sailors from distant ports and the riffraff that follows the sea."

"Those were the conditions which prevailed throughout the period of our own Civil War, for it was not until 1868 that Joseph Lister published the results of his experiments with carbolic acid solution applied directly to the wound, which resulted in prompt healing without the appearance of pus. Stimulated by the work of Lister and Pasteur, the study of micro-organisms concerned in disease and infections made vast strides. Cultures made from dust of the floors, walls, beds and utensils of the wards and operating rooms of the hospitals disclosed the presence of germs of contagious diseases practically everywhere.

"Only then could it be appreciated that hospitals had been the breeding places of infectious diseases, but now, with the precious gift of carbolic acid, and other antiseptics as they were discovered, the wards could be sterilized and kept clean. Later it was demonstrated that if the appliances could be purified in boiling water or steam and by scrupulous care be protected from subsequent contamination, antiseptic solutions might be discarded and the irritation of the skin from contact with carbolic acid or bichloride of mercury could be avoided. This is today's method of aseptic surgery."

President's Page

To the Members of The Kansas Medical Society:

May I especially address the chairmen of the various committees who represent the leadership of the Society activities throughout the year. It must be realized that the accomplishments of the Society during this year rests in the hands of its various committee chairmen and the personnel of the committees. Your activities will be the measure of progress during this time. An outline of possible activities of each committee is being assembled by our Executive Secretary and will shortly be completed.

It is hoped that in the meantime the chairmen of the various committees will also be giving close attention to possible activities that may come under the direct efforts of each committee's activities throughout the year. The agenda, being prepared in conjunction with other activities proposed by the chairmen and the committee personnel, will be the working basis for our efforts in accomplishment throughout the year.

It is anticipated in the near future that meetings will be held with the chairmen in most suitable locations throughout the state and the suggestions compiled by our Secretary and yourselves will be considered and such items that seem most desirable and others deleted until a definite outline of endeavor may clearly be understood by all.

It is considered advisable to have such group meetings early in the fall, promptly after the vacation period. May we hold ourselves in readiness to respond a hundred per cent when the call is sent out for such group meetings. Organization to be efficient must be of necessity time consuming and not without self-sacrifice.

Let us, as the Society's representatives, be willing to give much thought and time and sacrifice to our work for the coming year. May I, at this time, express my appreciation for the many favorable responses accepting committee work. May our enthusiasm continue throughout the year and in the end may we experience a step forward in the progress of medicine in our State.

Sincerely,

Clyde D. Blake M.D.

EDITORIAL

THEODORE CALDWELL JANEWAY

An interesting article by Flaxman in the May issue of the *Bulletin of the History of Medicine* is devoted to the life of Theodore Caldwell Janeway and his work on hypertension. He was the son of Edward G. Janeway of New York, who at the turn of the century was considered America's leading clinician consultant and teacher of medicine. The influence of the father was strong and his son acquired much of his extraordinary skill through the professional association which continued for several years.

Theodore Janeway was successively an instructor in medicine at Bellevue Medical College, professor of medicine at Columbia University and full time professor of medicine at Johns Hopkins University. In addition he with Oertel, instituted the clinical pathological conference in New York at the City Hospital which gave a new impetus to the teaching of medicine. He initiated the clinical study of blood pressure in this country and he invented the practical sphygmomanometer for use at the bedside.

Janeway's first book on the clinical study of blood pressure published in 1904 was not the first book on the subject but it was the one that brought the subject to the attention of the American physician. It also was the beginning of an intensive study of all the aspects of hypertension which continued during the remainder of his life.

He carried out experiments on animals to determine the renal factor in hypertension and the influence of epinephrine in the circulating blood. It is particularly significant that he definitely recognized the renal factor in persistent hypertension, altho the mechanism escaped him.

For nine years he studied 870 private cases of essential hypertension and made detailed analyses of their symptoms and course. He states: "Patients exhibiting persistent high blood pressure as the salient feature of their disordered physiology seem more common in private practice than in hospitals, where we see the terminal but seldom the earlier manifestation. When they come to autopsy, as a rule, many secondary effects of the hypertension are present to confuse the picture. For these reason I feel that such facts as I desire to bring forward have a certain validity apart from the postmortem confirmation."

He emphasized the fact that the most important symptoms are circulatory rather than renal, that the

most common symptoms are cardiac and he charted the whole life history of the victim of essential hypertension.

It seems a far cry that in 1904 Dr. Janeway rather apologetically suggested that the sphygmomanometer might prove of value in the hands of some physicians.

PUBLIC HEALTH PROGRAMS

An interesting example of varying concepts, relating to needs and proper methods for handling of public health programs, is contained in the following account of a discussion which occurred in Congress on a bill on that subject.

The bill referred to is H.R. 4926, wherein there was included a request by the Children's Bureau of the Department of Labor for an emergency appropriation to provide "maternal and child welfare assistance" in areas having national defense projects.

In a hearing on the bill before the House of Representatives' Committee on Appropriations, Miss Katherine Lenroot, chief of the Children's Bureau, commented as follows in regard to the belief of her department as to the need for the appropriation:

"Striking evidence of the need for maternal and child-health personnel in defense is shown in information received by the Children's Bureau from thirty-four state health agencies. We have very recent information from those agencies which has come in since we submitted our estimate to the Bureau of Budget and which indicates a need far in excess of what we have here. But we do feel, with the additional personnel that would be made possible by the appropriation, we could greatly assist the states in meeting their most urgent needs and in planning for additional resources, either state or local, to provide for more adequate service. . . ."

"Now, in order to meet these situations on a minimum basis and as quickly as possible, the Children's Bureau, in conference with representatives of the state agencies responsible for both health and welfare, devised this plan whereby we would add to the staff of the Children's Bureau a certain number of medical officers and public health nurses; graduate nurses to assist in child health clinics and conferences; a few nutritionists; and child welfare workers; that these workers would be employed under civil service, just as our other staff would be employed, but they would be, for the most part, assigned to state agencies of health and welfare with which we are already cooperating under the Social Security Act, under agreements with those agencies as to the communities in which the workers would be placed and the services which they would perform. . . ."

In response to a question submitted by Representative Tarver of Georgia, a member of the committee, as to whether these medical officers so assigned would undertake to supply general medical services in areas around national defense projects, Miss Lenroot replied:

"They would work primarily in maternal and child health conferences and clinics and as consultants, to such prac-

ting physicians as are available, who would not have the special background in obstetrics or pediatrics, which would be necessary in certain types of cases. I would presume, also, these medical officers would actually take care of sick children if there was no other medical service available in the community."

Pursuing this thought further, Representative Tarver said:

"There is another thing, it seems to me, that ought to be taken into consideration, and that is that these workers in defense areas are getting much higher wages than the ordinary worker in the United States in other types of industry, and I am wondering what justification there is for the Federal Government to provide medical services and nursing services for his family and his children, when the same type of service is not provided for workers in industry and for other citizens of the country. . . .

"It is my observation that doctors and nurses usually go to localities where they can get patients for good pay, and, if there is not a sufficient number of physicians and nurses in those localities for service to families where the well-paid workers are located, I think it would probably be quite as easy a matter for physicians and nurses in private practice to be attracted to those localities as for you to employ them at public expense and send them there."

Representative Keefe, of Wisconsin, also a member of the committee, expressed himself as disturbed by the thought that if the appropriation asked for be made, a program would be initiated under emergency conditions that would not be terminated after the emergency had ceased to exist. He said:

"I am exceedingly interested in the extension of this type of service within the ability of the people of this country to sustain the program. But I am frank to say that the presentation of this matter, as it impresses me, indicates a good deal of hysteria. Now, I have received letters—I suppose because I am a member of this committee; I do not know any other reason why I should receive them—but I have received letters from public health officers and organizations from one end of the country to the other, all of them proclaiming the great need that exists. Granted. You say that you can only just scratch the surface of it with what you are asking here now; you can only fill a little bit of the need. Well, is this going to mean then, that this thing is going to grow and grow and grow until we ultimately achieve the ideas of all these social workers throughout the country as to what they think is necessary for child welfare and maternal care and all that sort of thing throughout the whole country? . . .

"Has there been any evidence of any epidemic in any of these places? Has there been any evidence of any deaths resulting from malnutrition or lack of proper care during childbirth or anything of that kind? Is there any evidence available to show any of those things? . . .

". . . I am frank to say that my short experience in national affairs leads me to conclude that once one of these things gets under way, and once the personnel is established, and once the program is established, it is going to be mighty difficult to keep it from being established forever, despite all the optimism that you display that this is not a permanent program, and that you would like to see it restored to the original status. . . ."

In reporting the bill to the House, the Committee on Appropriations refused to include in it the spe-

cific appropriation under discussion and justified its action in the following words:

"A supplemental Budget estimate of \$878,000 was submitted to Congress in House Document 211 for the purpose of authorizing the Children's Bureau to undertake the task of supplying services to cope with the problems presented in adequately caring for maternal and child health and welfare in defense areas that have developed in mushroom fashion and where state and local facilities are not sufficient to supply the health needs of the mothers and children resident in these localities.

"As a matter of national policy we have embarked upon a program of grants to states for maternal and child health and welfare. The states, under the terms of these grants, are required to match the Federal funds so given them with certain state moneys. To now embark upon a policy of giving direct Federal aid in these defense areas would be to do violence to the general policy that has been laid down and would doubtless tend to commit the Federal Government to a program of direct Federal participation in a program of maternal and child health and welfare. No such program of this nature is at present authorized by Congress and while there is some division in the subcommittee as to whether the Federal Government should or should not project itself into this picture as an emergency measure, the subcommittee is unanimous in its thought that the subject is of sufficient importance from a policy standpoint as to justify the proper legislative committee reviewing the matter of need and justification for Federal participation with a view of authorizing Federal assistance within defined limits or denying it altogether as the case may be. States and localities have clamored to be beneficiaries of Federal construction for national defense. It does seem to the committee therefore, that those states and localities that have been successful in their quest and have, as a result thereof, increased tremendously their state wealth should proceed to levy taxes sufficient to care for the problems of social welfare that ensued in the wake of vast concentrations of population in these defense areas."

The House of Representatives acquiesced in the recommendation of its Committee on Appropriations and the bill has now been enacted into a law without the requested appropriation.

It is probably true that most physicians, and most other persons who are accurately familiar with the needs of public health, will agree with the opinions expressed by Representative Tarver and Representative Keefe. Instead of public health money being wasted in un-needed instances of this kind, and in many similar instances, what a wonderful thing it would be if the public health concepts and the public health expenditures of this country could be unified and standardized behind the great needs of lay-education, assistance in the care of the indigent, the elimination of cults and other unqualified practitioners, and the provision of needed equipment and facilities.

There are 6,043 more physicians practicing medicine than there were last year. According to the Journal of the A.M.A. about 4,000 doctors were removed by death.

TUBERCULOSIS CONTROL

TUBERCULIN TESTING IN CHICAGO SCHOOLS

This survey was carried out by the Chicago Municipal Sanitarium, aided by the Tuberculosis Institute of Chicago and Cook County.

The survey policy of the Municipal Tuberculosis Sanitarium had hitherto been largely oriented toward older groups. Tuberculin testing in the schools, therefore, represented a deviation from established policy and was undertaken in order to explore educational values, morbidity rates, and case-finding potentialities of a follow-up of the reactors and to check on existent case-finding machinery.

As the purpose was to obtain a cross-section of tuberculosis morbidity, the survey attempted to include every Chicago school. However, it was necessary to sacrifice certain ambitions, such as a 100 per cent consent and a thorough survey of each school. In a general way, the policy ran, "Get what consents you can in the time allotted and go on to the next school."

Kindergarten, first and eighth grade children and all available students in the high schools were examined because a positive reaction in a kindergarten or first grade child might have some epidemiological significance; eighth grade children were on the threshold of adolescence and many would not go to high school. Thus it might be their last chance of inclusion in a case-finding effort. In view of the many studies already made, justifiability of high school examination was hardly debatable.

First, the Board of Education notified the principals. Then the nurse addressed the teachers and children in each room. All were given appropriate literature which, with the consent card, the children took home. After due interval the operating team did the tuberculin test and results were read in forty-eight hours.

In all, 176,878 consents were obtained in 561 public elementary schools, 115 public high schools, 347 parochial elementary schools, forty-seven parochial high schools, twelve trade and vocational schools and five junior colleges.

A self-contained and complete mobile unit, the first as far as is known to be used in the x-ray field, was devised. On starting work the truck drove into the school yard and the technician selected a location as near as possible to space for extra dressing rooms. Current was obtained through a cable from a school connection.

The procedure, carefully standardized, was to give a single Mantoux test using Purified Protein Derivative in an amount one-tenth the usual final dose. The percentage of reactors with this dose was low compared with the experience in other urban areas so the injection unit was doubled in the latter part of the work, except in the case of Negroes and Mexicans who had shown marked sensitivity to tuberculin.

In the 167,345 children tested, 27,401 proved positive. To March 1, 1940, 23,532 had been x-rayed and 218 cases of reinfection type tuberculosis were found of whom 109, or fifty per cent, were in the moderately or far advanced stage; in 4,524 children, evidence of primary infection type tuberculosis was found.

The reactor rate and the primary tuberculosis rate was practically the same for boys and girls but the incidence of reinfection type tuberculosis was twice as high in girls. The incidence of disease among children x-rayed was higher in Negroes and Mexicans but not to the same degree as the infection rate. The Negro children had slightly less primary tuberculosis than the white.

The study seemed to bear out the reports of other workers who found a lack of constant correlation between tuberculin sensitivity and tuberculous calcifications.

In comparison with other metropolitan surveys, the reaction incidence in Chicago is low. This may be due to the fact that no open case may live in the same home with children under sixteen. Contact is broken as soon as possible after discovery of the case.

Survey results confined to a district or a constellation of districts would lead to false conclusions. The survey included schools in every district and children from every economic level. The major part of the tuberculosis problem is sharply localized. About four of the seventy-five census districts account for thirty-eight per cent of the deaths. Mortality in these areas is much higher than the general rate, namely, 196 per 100,000 as compared to 51.6 per 100,000 for the city as a whole. Morbidity figures run low in the same ratio.

In Chicago, as elsewhere, decreasing mortality rates probably exerted influence on the composition of the infection index. The rate has fallen from 147.9 per 100,000 in 1917 to 51.6 per 100,000 in 1939. Over the same period, the rate has fallen from 133.9 to 34.0 for whites and from 414.0 to 281.7 for Negroes, per 100,000.

In an attempt to estimate the diminution of the reactor rate the present figures may be compared to older studies, one made by Webb of the University

of Chicago in 1930-31, the other by Novak and Kruglick of the Tuberculosis Institute of Chicago and Cook County in 1933-37. Webb tested no high school children and Novak and Kruglick tested no elementary school children. In elementary school ages, comparing Webb's figures with the present study, since 1930-31 there has been a definite drop for each age period. Comparing high school tests for 1933-37 and 1936-39, there is also a substantial drop for each age period, except for age twenty; only twenty-nine students of this age were tested in the Novak study.

The specific relation between the tuberculin positives and tuberculosis in the home was clearly demonstrated in the present survey. The source of infection was unmistakably established in 3,284 instances but of these only 226 were new pulmonary cases.

The comparatively small number of new cases found in the families of the positive reactors was both a disappointment and a satisfaction. A larger proportion of new tuberculosis had been anticipated but it was encouraging to know that the existent case-finding machinery was effective, since in ninety per cent of the cases the source of infection was already under supervision.

Altogether, 586 new cases of tuberculosis were found. The total cost chargeable to the survey for the 586 cases found was \$511.95 per case.

In order to explore its potentialities, figuratively speaking, the miniature x-ray was carried almost to the doorstep of the people in the congested areas. The equipment was hooked up to the mobile x-ray truck and this self-contained unit, including dressing rooms, was taken to various locations. The plan, still operative, aims to make an x-ray examination of every man, woman and child in certain areas of gross congestion, high tuberculosis mortality and low economic status.

In the school survey, lasting three years and comprising 23,532 x-ray examinations, 218 new cases were found on the first film. In the miniature x-ray survey comprising 20,956 examinations and lasting five months, 675 new cases were found by the original x-ray.

SUMMARY

During the three-year period, 167,345 children were tuberculin tested and 23,532 x-rayed. The reactor incidence was 7.04 per cent for kindergarten and first grade, 19.82 per cent for eighth grade, 21.29 per cent for high school students and 29.97 per cent for miscellaneous schools and colleges. The rate for Negroes was twice that of whites and for Mexicans it was still higher.

This study shows a substantial drop in the reactor rate in Chicago as compared with older studies. The

city-wide survey emphasized the fact that each district had its own reactor rate which was allied to local mortality rates.

Of 57,481 children under twelve tested with tuberculin, nine cases of pulmonary disease were found, which is comparable to figures for this age group in the mortality tables. Facts point toward the adolescent and early adult years as the case-finding provinces. In testing adults in highly infected milieus (sixty per cent reactions or more) x-ray of the entire group is cheaper than tuberculin testing with x-ray of the positives.—From *Tuberculosis Abstracts*, August, 1941, reprinted from the *Bulletin, Chicago Municipal Sanitarium*, Vols. 18-19-20, Years 1938-39-40, 1-12, inc.

NEWS NOTES

COMMITTEE MEETING

A meeting of the Committee on Conservation of Eye Sight was held in Topeka on July 17. Plans of the committee for the coming year were discussed.

CONGRESS

H.R. 4476, a bill authorizing the employment of osteopaths as well as doctors of medicine in the intern facilities of the United States Army, was passed by the House of Representatives on July 21. The bill is now pending in the Committee on Military Affairs in the Senate.

H.R. 4965, which contains a similar provision, was passed by the House and the Senate and signed by the President. H.R. 4476 differs from H.R. 4965 in that the latter was an appropriation measure containing the above authorization only for the current year. H.R. 4476 contains a permanent authorization in that regard.

AUTOPSIES

It is believed that the following opinion prepared by Senator Kirke Dale of Arkansas City, in regard to the performance of autopsies, will be of interest to all members.

"I assume you refer to autopsies done without the consent of relatives of the deceased or persons entitled to the possession of the body.

Section 19-1003, G. S. 1935 provides:

'The coroner shall hold an inquest upon the dead bodies of such persons only as are supposed to have died by unlawful means, or the cause of whose death is unknown.' and in such inquest it shall be his (the coroner's) duty to summon forthwith, six citizens of the county to appear before him at a time and place named.'

The purpose of the inquest is, of course, to ascertain if possible, the cause of death, and where the death is (a) supposed to have been caused by unlawful means or (b) unknown.

At the inquest the evidence is presented to the jury and it is the jury, not the coroner, which returns the verdict.

The coroner acts in a ministerial capacity and presents or causes to be presented to the jury all available evidence.

Section 19-1017, G. S. 1935 provides:

'In an inquisition by a coroner, when he or the jury shall deem it requisite, he may summons one or more physicians or surgeons to make scientific examination, who shall be allowed reasonable compensation by the Board of County Commissioners.'

The section last above quoted has not, so far as I can find, been construed or passed upon by our Supreme Court and until our court has spoken, it is impossible to answer this question with definite assurance.

I can, however, give you my own personal construction and opinion based upon the statutes above quoted and the law generally.

An autopsy is defined as a post-mortem examination. Sec. 19-1017 contemplates, when deemed requisite by the coroner or the coroner's jury, a scientific examination of the body by one or more surgeons or physicians summoned by the coroner. It is my opinion that this scientific examination deemed requisite by the coroner or the coroner's jury would include an autopsy, if such was necessary to or beneficial in determining whether the death was caused by unlawful means or the cause of death of same is actually unknown. I do not believe that an autopsy would be warranted simply for the purpose of settling a dispute as the cause of death.

It is generally conceded that autopsies are sometimes essential to the protection of health and the discovery of crime. In such a case, the welfare of society demands that the state or its authorized representatives be permitted to conduct an examination or have an examination made by dissection, if necessary, without reference to the wishes of the relatives of the dead. Hence, a coroner has a right to perform an autopsy or have one performed where good reason therefore exists, and there is no liability on his part if the autopsy is performed in an ordinarily careful manner, notwithstanding the absence of consent by the members of the deceased's family. No action can be maintained against a coroner or against the examining physician for the ordering or performing of an autopsy or post-mortem examination where the circumstances are such as to render the examination reasonably necessary and proper in the exercise of the duties of such coroner and medical examiner and if the work is done in a decent manner and without wantonly disfiguring the body. On the other hand the performance of an autopsy by a coroner or one designated by him in the absence of sufficient facts to bring the case within a statute giving the coroner such a right, is a basis for the recovery of damages, although there was no wilful and wanton mutilation of the body and the wrongful act itself is the infringement of a legal right. You should also remember that an invalid or unauthorized order for an autopsy issued by a coroner does not protect the physician against liability for performing the autopsy.

It is therefore my opinion that before you participate at an inquest by making a scientific examination of the body, you should, if possible, assure yourself that the body is that of a person supposed to have died of unlawful means or is a person the cause of whose death is unknown, and under no circumstances should you perform an autopsy until in the process of conducting the inquest the coroner or the coroner's jury shall have deemed it requisite that a scientific examination of the body be made and for your protection I think you should see that such a finding or order is made a part of the record of the inquest."

F. S. A. PLANS

The Farm Security Administration District Office at Amarillo, Texas, has issued the following report pertaining to the operation of the Southwestern Kansas Mutual Aid Association during the past two years.

The Southwestern Kansas Mutual Aid Association is the title of the joint F. S. A. medical plan which is being operated in Greeley, Wichita, Scott, Lane, Hamilton, Kearney, Finney, Stanton, Grant, Haskell, Gray, Ford, Morton, Stevens, Seward, Meade, Clark, and Hodgemen counties.

	Fiscal Year Ending 4-30-40	Fiscal Year Ending 4-30-41
Total Membership Served	642	691
Membership Fees—per year.....\$	30.00	\$ 28.00
Total Funds Available for Medical Service	18,427.58	19,583.75
Total Funds Available for Administration	751.81	849.92
Obligations for Physicians Services	13,759.20	13,027.45
Physicians Services Paid.....	9,768.51	12,491.78
Obligations for Optical Services....	348.00	24.00
Optical Services Paid.....	348.00	24.00
Obligations for Hospitalization....	4,652.82	4,885.50
Hospitalization Paid	4,652.82	4,885.50
Obligations for Drugs.....	2,640.47	.....
Drugs Paid	2,640.47	.....
Obligations for Dentists.....	1,091.00	1,027.00
Dentists Paid	1,091.00	1,027.00
Obligations for Nurses.....	14.50	24.00
Nurses Paid	13.25	24.00
Obligations for Chronic Treatment	218.00	928.75
Chronic Treatment Paid.....	218.00	928.75
Obligations for X-Ray and Anesthetics .....	.....	105.00
X-Ray and Anesthetics Paid.....	.....	97.37
Obligations for Administration	751.81	951.47
Administration Paid	751.81	951.47
Deficit	4,296.46	534.50

The fees quoted under the plan are listed below. Payments are made under these fee schedules in accordance with the recommendations of the auditing committee and to the extent that sufficient funds are available.

FEE BASIS FOR SERVICE RENDERED

Office Call	\$ 1.00
Home Call	2.00
Obstetrics—Hospital	15.00
Obstetrics—Home	25.00
Mileage—First 20 miles, per mile..	.50 thereafter \$0.10
Tonsillectomy	15.00
Appendectomy	50.00
Hospital Room—First day	4.00 thereafter \$3.00
Teeth Extraction—Each	1.00
Filling—Each	\$1.00 to \$3.50

FEDERAL ASSISTANCE

A bill is presently pending in Congress which if passed will make it possible for communities having national-defense projects to receive Federal financial assistance for the construction and maintenance of hospitals and other facilities for the care of the sick.

Excerpts from the bill (H.R. 4545) are as follows:

"Defense Housing—It is hereby declared to be the policy of this title to provide means by which public works may be acquired, maintained, and operated in the areas described in section 202. As used in this title, the term

'public work' means any facility necessary for carrying on community life substantially expanded by the national-defense program, but the activities authorized under this title shall be devoted primarily to schools, waterworks, sewers, sewage, garbage and refuse disposal facilities, public sanitary facilities, works for the treatment and purification of water, hospitals and other places for the care of the sick, recreational facilities, and streets and access roads.

Section 202. Whenever the President finds that in any area or locality an acute shortage of public works or equipment for public works necessary to the health, safety, or welfare of persons engaged in national-defense activities exists or impends which would impede national-defense activities, and that such public works or equipment cannot otherwise be provided when needed, or could not be provided without the imposition of an increased excessive tax burden or an unusual or excessive increase in the debt limit of the taxing or borrowing authority in which such shortage exists, the Federal Work Administrator is authorized, with the approval of the President, in order to relieve such shortage—to make arrangements therefor—

"No department or agency of the United States shall exercise any supervision or control over any hospital or other place for the care of the sick (which is not owned or operated by the United States) with respect to which any funds have been or may be expended under this title relating to, or any lease, grant, loan, or contribution made under this title to, or on behalf of, any such hospital or place, prescribed or affect its administration, personnel, or operation."

APPOINTMENT

Warden M. F. Amrine of the Kansas State Prison at Lansing has announced that Dr. David R. Sterett and Dr. J. W. Risdon, both of Leavenworth have been appointed as physicians for the prison.

Dr. Sterett will serve as physician and superintendent of the prison hospital and Dr. Risdon will serve as surgeon and assistant physician.

NEW EXCHANGES

The Journal acknowledges the addition to its exchanges of the Revista Medical Municipal published in Rio de Janeiro, La Prensa Medica Mexicana of Guanajuato, Mexico, the Bulletin De Biologie et De Medecine Experimental De L'uress of Moscow, and the Journal of the Philippine Medical Association. All are creditable publications and it is our hope that these exchanges will promote and intensify the relationship with their respective countries.

NUTRITIONAL CONFERENCE

The new Committee on Nutrition, which was recently appointed by Governor Payne H. Ratner, will hold its first annual session in Topeka on October 17-18, 1941.

Plans are being made for various organizations to be invited to the meeting and for a program to be presented consisting of papers and other discussions on nutrition.

The Kansas committee was organized in conjunction with a national-defense program of having similar committees in each state engage in coordinated activities on this subject. The chairman of the Kansas committee is Dr. Margaret Justin of the Kansas State College of Manhattan. Dr. Paul E. Belknap of Topeka is the physician member of the committee.

RESIGNATION

Dr. Thomas L. Foster recently resigned his position as superintendent of the Osawatimie State Hospital in order to accept an appointment in the Psychiatric Department of the Hertzler Clinic at Halstead. Dr. Foster's successor has not as yet been announced by the Kansas State Board of Social Welfare.

LOCATIONS

The Society Committee on Locations knows of a considerable number of locations which are available by reason of physicians being called to military duty and through other vacancies. Physicians who would be interested in new or changed locations are asked to communicate with Dr. A. C. Armitage, Hutchinson, chairman of the above committee, or the Society central office.

LEAVE OF ABSENCE

Dr. F. P. Helm, Secretary of the Kansas State Board of Health, has been granted a nine months leave of absence by the Board in order that he may take additional post-graduate work in public health at the Johns Hopkins School of Medicine in Baltimore, Maryland.

Dr. Helm will leave for Baltimore on September 10.

LETTER

Mr. Jay S. Parker, Attorney General of the state of Kansas recently forwarded the following letter to each of the new physicians licensed by the Kansas State Board of Registration and Examination, at the June examinations:

"I note in recent editions of the daily papers your name is listed as one who is now licensed to practice medicine in Kansas.

As one who grew up in a family of doctors, and has a father and brother engaged in the practice, I have had an opportunity to become intimately acquainted with a great many of the members of your profession and have always taken a great interest in its success.

You are now an active member of one of the oldest professions in the world and your opportunities for service to the public are unlimited. I know something about what it takes to obtain a license to practice medicine in this state and I realize you have achieved success by a lot of hard work and effort. For that reason, I desire to take this opportunity to offer you my sincere and hearty congratulations and extend to you for the years to come my best wishes for every success in the practice of your chosen profession."

FEEDING CARDS

The Kansas State Board of Health has published a series of cards containing suggestions for the feeding and care of infants and children. The cards have been divided as follows: Card one for children four months of age or less; card two for the fifth, sixth, seventh, and eighth month; card three for the ninth, tenth and eleventh month; card four for the twelfth to the twenty-third month and card five for two to five years inclusive.

A letter describing the cards, forwarded by the Board to all Kansas doctors of medicine, contains the following suggestions: "Your interest in the health of our Kansas children has been appreciated by the Child Hygiene Divi-

From Smith, Kline & French Laboratories, Philadelphia

IN HAY FEVER

Weeks of acute misery, or weeks of comparative comfort? To the hay fever sufferer Benzedrine Inhaler often makes just that difference.

BENZEDRINE INHALER

Each tube is packed with amphetamine, S.K.F., 325 mg.; oil of lavender, 97 mg.; menthol, 32 mg. 'Benzedrine' is S.K.F.'s trademark, Reg. U.S. Pat. Off.

BENZEDRINE
Inhaler

SMITH, KLINE & FRENCH LABORATORIES, PHILADELPHIA, PENNSYLVANIA

sion. In an endeavor to be of service to you along this line, the Division of Child Hygiene is enclosing a newly prepared set of Infant and Preschool Feeding cards for your consideration. It is thought, if used correctly, these would be an aid to you and your patients because: (1) It would relieve you of a great deal of detail and explanation, thus minimizing the chances for some of the instructions being overlooked, yet the cards are so written that you can add to or change with a stroke or two of the pen to suit the individual needs of the child. (2) The cards are a reminder to the mothers to take the baby to see her physician when the baby is well so that he can help her to keep it well. (3) While some of the mothers are able to buy prepared food, some are financially unable to do so, therefore, methods are given for preparing certain foods from the garden so that the money may be used for other necessary things such as cod liver oil, immunizations, and medical care. (4) The mother is reminded of immunization time and the cards will aid as a reminder to the physician in case this should slip his mind when the child is present."

Supplies of the cards may be obtained from the Division of Child Hygiene of the Kansas State Board of Health at Topeka or from the county public health nurses.

OPINION

The following opinion prepared by Mr. Theo F. Varner of Independence, attorney for the Kansas State Board of Medical Registration and Examination, was published in the Kansas Pharmaceutical News for July:

"Answering the inquiries still coming into this office on 'What can we do on osteopath prescriptions?' we present the following letter:

June 26, 1941

Dr. J. F. Hassis, Secretary
Kansas State Medical Board
804 Huron Building
Kansas City, Kansas

Dear Doctor Hassig:

It is my understanding that Mrs. C. B. Miller, Executive Secretary of the Kansas Pharmaceutical Association has made further inquiry of you relative to the powers and duties of licensed pharmacists in filling prescriptions written by osteopaths.

The law is well settled in this state that osteopaths are not permitted to use drugs or perform surgical operations in the practice of osteopathy. This rule has been applied both in the Supreme Court of this state and the U. S. Circuit Court of Appeals. In view of the fact that the use of drugs by osteopaths is in violation of the law it would seem clear that pharmacists filling prescriptions calling for the use of such drugs would be aiding and abetting the violation of the law.

I am very pleased to report that rather extensive investigations throughout the state have disclosed that many osteopaths have discontinued violating the law in this respect. It has also been my observation that the licensed pharmacists of the state, with few exceptions, have been and do refuse to fill prescriptions written by osteopaths.

I am sure that the few remaining who do so would discontinue that practice if they fully realized the possible consequences which might follow that unlawful act. I refer, of course, to the civil liability that might arise against the pharmacists as well as the chances of criminal prosecution and the chances of being made a party to an injunction suit.

I trust that these views will be of some benefit to you as well as Mrs. Miller and the Pharmaceutical Association, and beg to remain."

Yours very truly,
THEO. F. VARNER.

MEMBERS

Dr. L. G. Balding, formerly of Manhattan, and Dr. Clifford Van Pelt, formerly of Riley, have announced the opening of an office in Junction City.

Dr. R. R. Becker, formerly of Spring Hill, has moved to Kansas City, Missouri, where he will open an office.

The following articles prepared by Kansas members and published in the Journal were recently abstracted in other publications: "Tuberculosis Case Findings in University of Kansas Students" by Dr. Ralph I. Canuteson of Lawrence, appeared in the July issue of Radiology; "X-Ray Interpretation in Tuberculosis Case-Findings" by Dr. Galen M. Tice of Kansas City was reprinted in the July issue of Radiology; and "The Non-Effectiveness of Metarazol Therapy in the Treatment of Schizophrenia (Dementia Praecox)" by Dr. G. Wilse Robinson of Kansas City, Missouri, was reprinted in the June issue of Southern Medicine and Surgery.

Dr. C. E. Coburn of Kansas City was named as representative director for the National Tuberculosis Association for a two year term and Dr. Charles H. Lerrigo of Topeka was appointed to the Advisory Committee of the Conference of Child Health and Education of the same organization, at the annual meeting of that organization held in Cleveland, Ohio, in May.

Dr. J. G. Hughbanks of Independence spoke before the Kiwanis club of that city on "The Use of Instruments in Surgery," at a meeting of that organization on July 3.

Dr. S. N. Mallison of El Dorado spoke to the Rotary club of El Dorado, on July 23, on the subject of "Health Conditions in Butler County."

Dr. John M. Porter of Concordia was a speaker at the meeting of the North-Central Kansas Social Welfare Association, held in Concordia on July 17. Dr. Porter discussed "The Medical Phase of Social Welfare."

Dr. Herbert Randles, formerly of White City, has moved to Fort Scott where he will practice with his son, Dr. Leland Randles.

Dr. Charles E. Rombold of Wichita and Dr. John H. Kleinheksel of Wichita were guest speakers at a meeting of the Woods-Alfalfa County Medical Society held in Cherokee, Oklahoma, on May 27. Dr. Rombold spoke on "Back Ache" and Dr. Kleinheksel spoke on "Diabetes."

Dr. George L. Thorpe, formerly of Wichita, has announced the opening of an office in Valley Center.

Dr. Charles L. White of Ellinwood left for Kansas City on June 30, where he will complete a year of post-graduate

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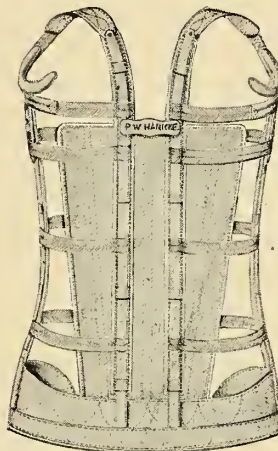
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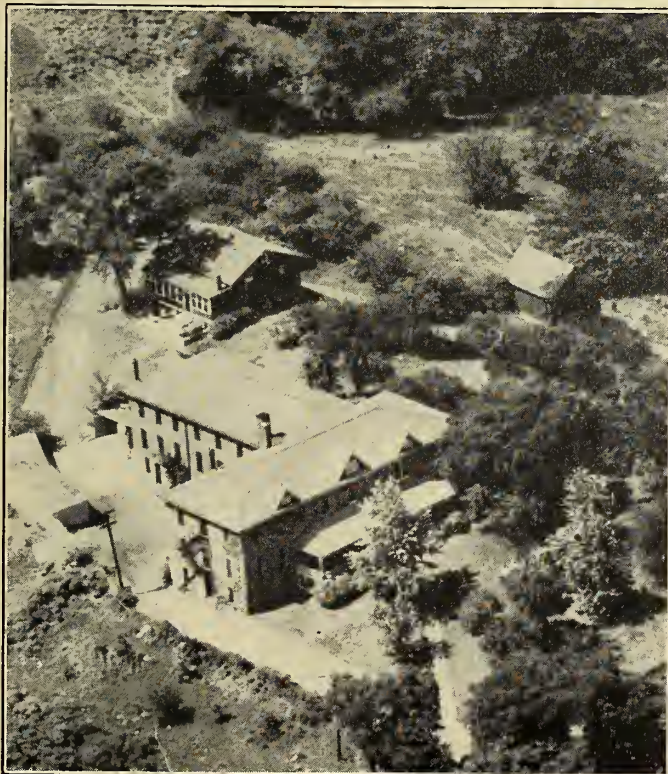
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work at the University of Kansas School of Medicine. Dr. J. M. Gaume, formerly of Salina, has taken over Dr. White's practice during his absence.

as a member of the Leavenworth County Medical Society and had served as physician at the Federal Penitentiary for twenty years.

DEATH NOTICES

Dr. Melvin Collins of Oxford, 80 years of age, died of chronic nephritis on June 9 in Wakefield. Dr. Collins was graduated from the Rush Medical College of Chicago in 1891. He was an honorary member of the Sumner County Medical Society.

Dr. Robert R. Robson, 85 years of age, died on July 7 at his home in Mayetta. Dr. Robson was graduated from the Ensworth Medical College of St. Joseph, Missouri in 1889. He was an honorary member of the Jackson County Medical Society.


Dr. Petros G. W. VanderWyst, 64 years of age, died on May 29 of nephrolithiasis hypertension at his home in Altoona. He was graduated from the Hering Medical College of Chicago in 1912. Dr. VanderWyst was a member of the Wilson County Medical Society.

Dr. Alfred F. Yohe, 76 years of age, died on July 23 at his home in Leavenworth, following an operation. Dr. Yohe was born in Leavenworth County in 1865. He was graduated from the Rush Medical College of Chicago in 1888 and from the Bellevue Medical College in 1892. He

BOOKS RECEIVED

MANUAL OF PHYSICAL DIAGNOSIS—With Special Consideration of the Heart and Lungs—Maurice Lewison, M.D., and Ellis B. Frelich, M.D., in collaboration with George C. Coe, M.D. Published by the Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, Illinois. Contains 317 pages, illustrated. Table of contents includes, History of Anamnesis, General Observation, Systemic Examination. Examination of the Respiratory System, the Cardiovascular System, the Abdomen, Genitalis, Extremities and Reflexes.

THE 1940 YEAR BOOK OF PEDIATRICS—Edited by Isaac A. Abt, D.Sc., M.D., Professor of Pediatrics, Northwestern University Medical School, Attending Physician, Passavant Hospital, Consulting Physician Children's Memorial Hospital and St. Luke's Hospital, Chicago; with the collaboration of Arthur F. Abt, B.S., M.D., Assistant Professor of Pediatrics, Northwestern University Medical School; Associate Attending Pediatrician, Michael Reese Hospital; Attending Pediatrician, Chicago Maternity Center; Children and La Rabids Jackson Park Sanatorium, Chicago. Priced at \$2.50. Published by the Year Book Publishers, Inc., Chicago, Illinois. Containing 590 pages illustrated.



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ANNOUNCEMENTS

The American Neisserian Medical Society has announced that it will award an annual prize of one hundred dollars, to be known as the P. S. Pelouze Award, to the physician under thirty-five years of age who, in the opinion of the Committee on Awards of the organization, has made the outstanding contribution to the control of gonococcal infection during the preceding year. Nominations for the award should be sent to Dr. Oscar F. Cox, Secretary of the American Neisserian Medical Society, 475 Commonwealth Avenue, Boston, Massachusetts, not later than March 31 of each year.

The Nineteenth Annual Fall Clinical Conference will be held in Kansas City, Missouri, on October 7-9. The Kansas City Southwest Clinical Society have scheduled fifteen distinguished guest speakers, announcement of whom will appear in a later issue of the Journal.

The thirty-first annual Clinical Congress of the American College of Surgeons will be held in Boston, Massachusetts on November 3-7, 1941.

KANSAS MEDICAL ASSISTANTS

A meeting of the Council of the Kansas Medical Assistants Society has been called by the President, Mrs. Vera Mathews, for August 31, at 7:30 p.m. at the Hotel Leon, in Hutchinson.

AUXILIARY

PRESIDENT'S MESSAGE

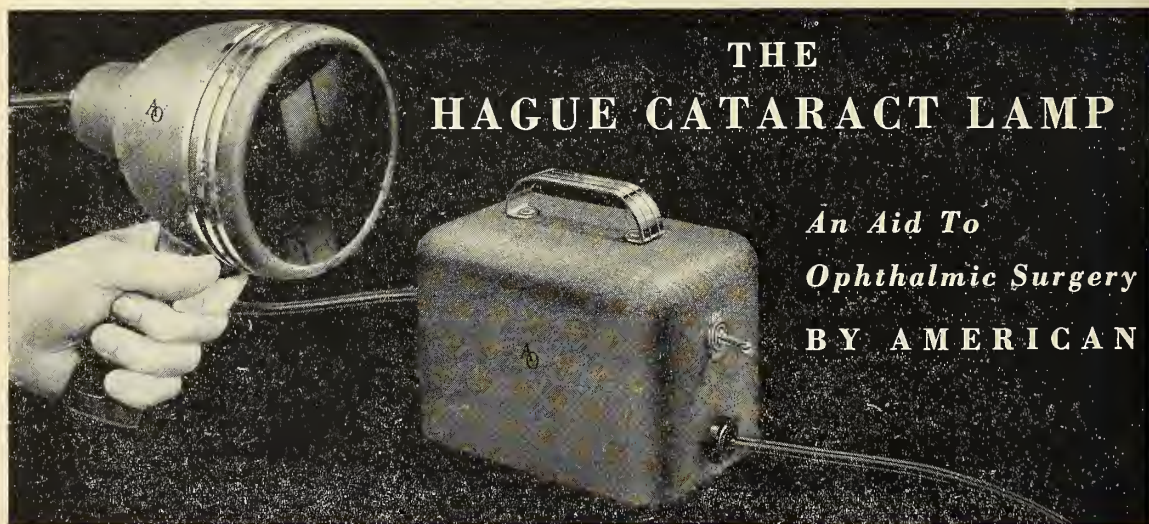
When this magazine reaches you it will be almost time for our first Auxiliary meeting of the fall. As we begin our year's program, let us take our work seriously for it is really a privilege to foster an organization that could be of such great service to our families, to our doctors, and to our communities. We are urged to study and to learn the eight points of the American Medical Association; to study and to learn to understand ourselves, and thus cultivate friendliness, tolerance and understanding.

As soon as the National Bulletin is sent out to us we will find plenty of program material. As nutrition is "one of our most vital defense problems" there will be interesting outlines of study on this subject. Above all other housewives, the doctor's wife should be an informed leader in maintaining a good health standard. Also in this next issue there will be a proposed study program of legislative procedure. Here again we can have an effective influence on the women in our respective communities.

We urge that every member of the state board will attend the state board meeting in Wakeeney on September 23. You will receive specific information on this meeting some time near the first of September. Please hold the date open.

Sincerely,

Mrs. W. Y. Herrick



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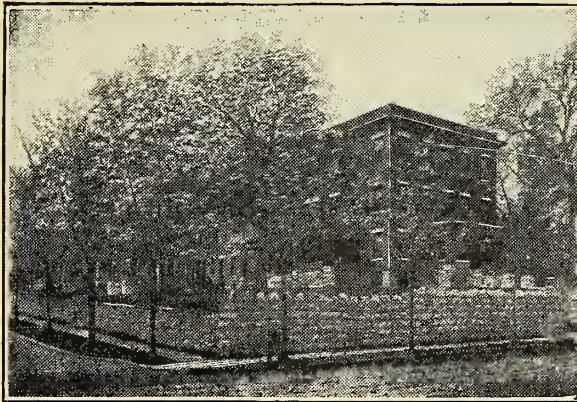
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AUXILIARY NOTES

Dr. Morris Fishbein has said: "Doctors wives should know what is going on. A wife is not a first-class doctor's wife unless she knows about his work and the progress being made in medicine."

A prediction of the future is given by Dr. Nathan B. Van Etton when he says: "I believe that the quality of your membership is such that you may be able to influence women's organizations of all kinds in a beneficial way for the service of the community and the promotion of public health. I believe that you can materially influence health statistics in the next decade!"

Bureau of Health Education—American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Bureau of Home Economics—Department of Agriculture, Washington, D. C.

Kansas State Board of Health, State House, Topeka.

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SUGGESTIONS TO COUNTY AUXILIARIES

1. Consult your local advisory board before launching on any new adventure in auxiliary work.

2. Plan part of your program along health problems, one very outstanding one being the nutrition problem. Inquire from your health department what your local situation is and encourage your members to study these needs.

3. Have your legislation chairman inform herself on pending legislation as to health and make a report at each meeting.

4. Study your Hygeia and the Bulletin—urge your member to subscribe to both. The Bulletin will be our official organ of information this year.

Sources for program material:

Hygeia—The Health Magazine, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

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Volume XLII

SEPTEMBER, 1941

Number 9

CANCER OF THE RECTUM*

Nathan A. Womack, M.D.**

St. Louis, Missouri

The problem of cancer of the rectum is an important one not only because of its frequency but because of the type of disability that it produces and because of the fact it is a disease that can be classed in the group of curable cancers. Too often carcinoma in general cannot be diagnosed until after it has produced extensions. Cancer of the rectum as a general rule produces definite symptoms before it has extended and the diagnosis is one that can and should be made by the family physician. There are many problems concerned in its study all of which cannot be considered in this communication. It is for this reason that broad principles will be discussed rather than any particular type of technique or limited statistical results.

It is well to spend a few moments in consideration of the background of our problem. Such a consideration will place one in a better position to appreciate critically the situation as it presents itself. Because of the fact that surgery of this lesion is so intimately concerned with the operation of colostomy we may consider that the first adequate approach in the treatment of carcinoma began with the performance of inguinal colostomy. The first recorded instance of such an operation is well worth our lengthy consideration. This was done by a French surgeon, Pillore, in 1776, and has been quoted in detail by Amussat in his book on "Artificial Anus." In abstraction the description of the procedure is as follows: "Mr. Morel, a wine merchant, during the course of 1776 became constipated and felt at first, slight pains in the rectum; these pains became worse though still tolerable, but the bowel difficulty increased to such a point that his anxiety caused him to come to Rouen for con-

sultation. He went to Mr. Delarouche, a skillful doctor who advised laxatives or mild purgatives which by softening the motion encouraged a continued evacuation for some time. But since the difficulty constantly increased he thought it wise to make him swallow mercury or quicksilver in such a strong dose that by its actual weight it might carry away with it the obstacle which caused the constipation. The patient actually swallowed two pounds of quicksilver; one expected it every day but it did not appear. Bowel action then was completely stopped. The abdomen increased in size day by day without being painful and without any inflammation. In this circumstance when the patient had already swallowed the mercury a month previously without it having appeared I was consulted. I first examined the rectum thinking that it should be in that part, that would be found the obstruction to the passage of the feces, being of the opinion that it might even be caused by the collection of the hard feces in the bowel as I have several times known to occur. But I found the upper part of the intestine (rectum) hard and scirrhus forming a swelling which completely obstructed it. I tried sounds and cannulas of every type and all sizes. I continued these efforts for several days without success. In this condition, when the patient had not passed anything by the rectum for more than a month and the abdomen was increasing in size all the time in spite of the strict diet that he kept to, I suggested to him the making of an artificial anus.

"I determined to do the operation, but as the case was a difficult one I asked five or six of my colleagues to come and see the patient in consultation; none of them agreed with me; but the patient, who was a man of common sense and was present at the consultation, asked them to point out any other means by which he might be saved. They all replied that they knew none. "Very well," he replied, "clearly one must have recourse to operation since you agree that alone can save me, and the malady is mortal."

"Encouraged by such strong reasons, I performed the operation in the presence of my conferees and six pupils that were with me at that time. I had chosen the caecum as that part of the intestine which

*Presented at the 82nd Annual Session of The Kansas Medical Society, Topeka, May 13, 1941.

**From the Department of Surgery, Washington University School of Medicine, Barnes Hospital and Barnard Free Skin and Cancer Hospital, St. Louis, Missouri.

was most suitable for carrying out my views both for its situation and because it would provide us with a reservoir, so that we might avoid continual and involuntary escape of the feces; a disc provided with a sponge in the form of a ball, and kept in place by an elastic belt, ought to act as a sphincter which the patient could open every time that he felt the need, and by means of small enemata he could from time to time wash out this reservoir. The patient and I had discussed the matter together and had agreed on everything before the operation. I commenced the operation by a transverse incision through the skin a little above the fold of the groin; I continued it obliquely from below upwards; by means of the subcutaneous cellular tissue I came to the aponeurosis of the external oblique which I incised a little above the Fallopian ligament to the same extent so as to have a canal at least an inch wide from the reservoir to the cutaneous opening. I made a transverse opening of almost the same extent through the muscles and peritoneum; the cecum, easy to recognize by the appendix, presented itself and I did not have the trouble of searching for it. I brought it as far forward as possible without difficulty; in that position, where it was maintained by myself and an assistant, I opened it transversely and fixed it to the two margins of the wound by means of a suture with two needles threaded on the same thread; I passed them from within outwards and cut the thread in the middle so as to obtain two loops which I tied above and below on two compresses so as to avoid puckering of the edges. The contents came out freely; for dressing I merely applied plain lint and towels. I did not apply pressure, in order that the escape of contents might not be hindered; actually they ran away freely for several days and the belly diminished considerably in size, but since the quicksilver gave us anxiety and we had not seen any of it appear, we made the patient take up all possible positions to provide an easy slope for the mercury; however we did not have a sight of it.

"Since the operation fourteen or fifteen days had already elapsed during which time the wound had suppurated, and the intestine had become adherent to the edges of the wound; I had taken out the stitch which fixed it and everything was in the best possible condition when the sick man felt some vague pains in different parts of the abdomen. We at first put them down to wind in the intestines, but the anxious patient said constantly that they were due to the mercury and consequently varied his position to make it come away. We had reached the twentieth day, when the belly, which had been flat, swelled up and became painful. We applied

fomentations and by means of the artificial anus we made injections into the colon; he was bled twice, but in spite of everything the symptoms increased and he died on the twenty-eighth day after the operation.

"I performed the autopsy in the presence of the same surgeons, both conferees and pupils, and found as follows. The cecum and commencement of the colon to the end of its arch were healthy and in good condition; the cecum was adherent to the edges of the wound except in one of the angles where there was formed a track of suppuration into the neighboring cellular tissue, a track which had no connection with the interior of the abdomen. The colon was open in all its length and contained only frothy mucus; the scirrhus tumor which constituted the primary malady extended for eight or nine inches and occupied the end of the colon and beginning of the rectum; for all this extent the canal was completely obstructed, the cellular tissue round about was hard and scirrhus and in the side of the rectum was an opening fifteen lines in diameter, the hard borders of which betokened a kind of chancrous ulcer which discharged purulent and foetid matter. The cellular tissue of the peritoneum in the region of the kidneys and the mesenteric attachments was suppurative without any collections of pus, the peritoneal membrane was inflamed and adherent to the neighboring folds of the mesentery. The quicksilver which the patient had taken was found in one of the last convolutions of the jejunum that by its weight it had dragged down to the hypogastrium behind the bladder; it had caused the formation of a pocket in the portion of intestine which contained it. This part of the intestine was inflamed and the inflammation extended to the loin. The gut was dotted here and there with gangrenous patches. The whole of the mercury was found and it had not diminished in weight.

"We believe that we can conclude from the observation that if the success did not correspond to our expectation, one ought to put it down to the mercury or quicksilver, for it is very likely that when the intestines, which on account of their great distension had lost part of their power, were empty of stercoral material, the peristaltic movement was not sufficiently powerful to expel the mercury. Then there supervened a retrograde movement which was indicated by the nausea and the pains which the patient experienced towards the twentieth day of the illness. If we add to this the dragging on the mesentery and the intestines of the two pound weight we shall not be surprised at the gangrenous inflammation which caused the death of the patient."

Following this amazing performance cecostomy was attempted by many other surgeons, the procedure for the most part ending fatally. This was due to the fact that no effort was made to bring the cecum outside of the abdomen before opening it and peritonitis intervened. This was recognized by Amussat who by meticulous anatomical dissection perfected a technique of colostomy by approaching the descending colon through the lumbar space and opening the bowel extraperitoneally. Such a lumbar colostomy circumvented the frequency of peritonitis and it was due largely to the persistence and the enthusiasm of Amussat that this procedure became frequently used. The lumbar colostomy was the procedure of choice for many years and it was not until after the brilliant work of Allingham, Reeves and Cripps that inguinal colostomy became established. At the beginning of the twentieth century then lumbar colostomy began to be discarded in favor of the inguinal colostomy now in use.

While Ward as early as 1865 insisted upon colostomy as being a part of the operation for cancer of the rectum this was not originally recognized as such. Although Faget as early as 1739 had reported excision of the rectum for cancer actually his procedure was one of proctectomy which was carried out more extensively a hundred years later by Lisfranc. Amussat again insisted upon the removal of the coccyx and his procedure was modified further by Kocher and finally by Kraske who in 1885 presented his brilliant thesis on the sacral removal of the rectum for cancer.

That this operation did not remove completely the cancer and its regional lymph nodes was appreciated but not completely. As early as 1883 Czerny had performed a perineal-abdominal excision of a rectum for carcinoma. In an effort to remove the tumor from below he found that it was impossible and he therefore made an incision in the lower abdomen and continued his operation from above. This unintentionally was the first record of a combined perineal-abdominal approach for such a tumor. Von Volkmann a few years later conceived of the block abdominal perineal excision of the rectum for cancer but full credit goes to Sir Ernest Miles of England who was the real pioneer in this field. Due to Miles' brilliant anatomical dissections showing the method of extension with identification of the nodes most frequently involved we are able to work out the type of operative procedure necessary in removal of all of the potentially involved tissue as well as the tumor. Miles' concept was appreciated in this country perhaps most enthusiastically by the late Dr. Dan Jones of Boston. Since then many surgeons have added greatly to the rationale of the procedure.

Among them may be mentioned Stone, Lahey, Rankin, and David. As time has progressed with the associated improvement in operative technique and preoperative care and facilities which add to the safety of the patient a once formidable operation has now become a procedure carrying with it a very high percentage of five year cures with a satisfactory operative mortality.

There are many techniques available none of which need be considered here in great detail as they may be found by consulting any of the standard treatises on the subject. Suffice it to say that the one stage procedure as advocated by Miles which carries with it inguinal colostomy with complete excision of the rectosigmoid and all of its associated glands from above, with excision of the rectum, anus and surrounding soft tissues from below, stands above all as the procedure of choice. It must be remembered, however, that frequently because of debility, obesity, age and other mitigating circumstances such an operative technique cannot be carried out without excessive danger with an operative mortality hardly justifiable. In such a situation various modifications have been suggested. The operation may be done in two stages, by the abdominal perineal procedures as advocated by Lahey and Rankin. Again a two-stage procedure which is even safer in so far as operative mortality is concerned may be the one recommended by Lockhart-Mummery. In this procedure the abdomen is entered and careful exploration is done after which a loop inguinal colostomy is performed, the bowel being opened into several days later. After several weeks have elapsed and the patient has been up for some time the rectum is then removed perineally the peritoneum being entered from below so that the tumor can be completely excised. Because of the fact that many of the higher lymph nodes cannot be removed with this procedure it is best limited to those growths situated very low in the rectum.

As in any operation requiring careful technique, anatomical knowledge and special preparation of the patient, surgical results are better in the hands of those men who have performed a large number of such operations. By this I do not mean that the surgical treatment of cancer of the rectum should be limited to only a few men. Any surgical procedure that can be performed by only a few individuals is not a satisfactory procedure. I would like to stress, however, that it does carry with it many opportunities for mishap and these mishaps become more frequent the more casual the abdominal surgeon.

Where experience and judgment are used with care, the results of surgical extirpation of the rec-

tum have become more or less standardized. It is probably fair to state that approximately fifty per cent of the patients whose rectum can be removed are alive five years later. The mortality at operation will vary in proportion to the percentage of patients whose lesions are considered resectable. Everything being equal the surgeon who attempts to resect seventy-five per cent of the patients that come to him will present a higher mortality rate than the surgeon who attempts to resect fifty per cent of the patients that come to him. It is for this reason therefore that one finds considerable variation in the operative mortality quoted by different clinics.

In evaluating the mortality of a surgical procedure one is able to obtain a much sounder approach if he considers the end results obtained where no therapy at all is used. Greenwood studying 1,315 patients with cancer of the rectum that were not treated found that at the end of one year 1000 remained alive, at the end of two years 571 remained alive, at the end of three years 280, at the end of four years 160, at the end of five years 71, and 39 were still alive at the end of six years. It can be seen, therefore, that a survival period of five years without evidence of existing cancer can be considered fairly adequate for statistical studies of end results of treatment.

These figures alone justify the procedure of surgical removal of the rectum. I would not labor this point were it not for the fact that too frequently even now we see patients whose lesion has been allowed to progress because they have been informed by physicians that the chance of cure is slight and that the mutilation of a colostomy is too terrible to make such a procedure justifiable. When an inguinal colostomy is properly done its nuisance value may be very slight. Fecal control while involuntary is nevertheless generally satisfactory. Evacuation occurs usually only once daily and sometimes once every other day. Colostomy bags of a bulky nature are generally not necessary, an elastic girdle often sufficing. There is no embarrassing escape of gas, and within a few months after operation the patient develops perfect confidence and in our experience is in no way excluded from physical exertion or social intercourse. Indeed, the relief offered by colostomy in carcinoma of the rectum is so great that seldom is one justified even in an inoperable case of allowing the patient to continue without a sidetracking of the fecal stream. Since it can be shown, therefore, that the surgical treatment for cancer of the rectum is now on firm surgical ground, that it offers the patient an excellent chance of comfortable survival and that it carries a surgical

mortality low enough to justify the procedure, our problem for the future becomes one of increasing the percentage of five year survivals and lowering the operative mortality.

There are three factors that I should like to consider that have to do with the obtaining of good surgical results. (1) The first of these can be considered under the head of early diagnosis. This must necessarily fall in the field of the family physician. In the vast majority of instances the patient complaining of symptoms referable to cancer of the rectum first consults his family physician. If this physician seeks an explanation for these symptoms in all probability he will discover the cancer. If he fails to seek such an explanation there is a great chance that before the cancer becomes apparent to the patient a great deal of harm may be done. The earliest and most outstanding single symptom is that of rectal bleeding. This is generally seen at stool and usually is a small amount of streaking. Because of the nature of the lesion it is not uncommonly associated with venous congestion of the lower portion of the rectum at the anal canal. Accordingly superficial examination will not infrequently disclose hemorrhoids. If one of these is ulcerated it is a great temptation for the examination to cease here. All too frequently one encounters a patient with carcinoma of the rectum who has had an operative removal of hemorrhoids within the preceding few months. Even though piles may be present, therefore, a thorough examination of the entire rectum must always be done.

Another symptom commonly observed is some change in the patient's bowel habits. This may evidence itself first as pressure deep in the pelvis. The patient often describes this as a feeling of incomplete elimination after a bowel movement and not uncommonly will make the statement that he finds it necessary to give himself an enema after his bowel movement before relief can be obtained. Oftentimes mucus is present around the evacuation. Again the patient may complain of diarrhea. When he is questioned about the nature of this diarrhea one finds that it is actually a pseudodiarrhea. The stools are not watery but are small in amount, soft, and frequent. Three and four stools a day are quite commonly associated with cancer of the rectum. Constipation also is a common sign, it being a progressive type of constipation often ending in obstruction. Such symptoms as pain and loss of weight carry a formidable prognosis. Pain particularly when it is distributed around the sacrum and the posterior portion of the thigh is often associated with invasion of nerve sheaths and is a symptom of inoperability rather

than a symptom of cancer. The same holds true to loss of considerable weight.

The vast majority of cancers of the rectum are less than two inches from the anal margin. Stated in another way ninety per cent of the patients who present themselves with cancer of the rectum have a lesion that can be felt with the finger. This gives presumptive evidence of cancer which can be verified by proctoscopic examination and biopsy. Too often proctoscopic examination is not done by the internist but is left for the specialist. It is a simple accurate procedure which should be a part of the armamentarium of any practitioner of medicine. Without it the diagnosis of rectal diseases in general and an appreciation of the extent of carcinoma of the rectum in particular becomes most difficult. With proctoscopy and direct visualization of the lesion to be treated, the problem becomes much easier. Needless to say no patient should have an excision of the rectum unless the diagnosis has been verified by microscopic examination of the tissue. The only exception to this rule are those instances in which the tumor is located so high that it cannot be reached with a proctoscope and on such occasions verification can be made by x-ray examination fairly satisfactorily. The only lesions of importance that are confusing are those inflammatory lesions particularly of the type associated with perforation of a small diverticulum of the sigmoid.

It is difficult to say with any degree of accuracy just how long a cancer of the rectum may persist without the production of symptoms. In all probability this period of time may be as long as several months. In studying a large series of patients reported from different hospitals the average length of time from the earliest symptoms to the time of operation, however, is generally about one year. This must be improved upon if surgical results are to be better. I cannot but feel that the most important single factor in bringing about this improvement is not education of the public but constant reminding the family doctor to be on the lookout for cancer of the rectum.

(2) The second important consideration in the obtaining of good surgical results has to do with the preoperative preparation of the patient. Cancer of the rectum should not be considered a surgical emergency. Even those rare instances in which the patient presents himself with what is apparently complete intestinal obstruction will be found in the vast majority of instances to clear up under decompressive therapy. Once the obstruction has been cleared up to the extent of the passage of gas and feces then time can be taken to correct the local damage produced by the obstruction such as the

presence of edema and systemic effect such as fluid imbalance.

Of utmost importance is the diet. It is to be kept in mind that immediately after the operation the patient must be able to withstand complete occlusion of the lumen of the sigmoid for several days. It is, therefore, urgent that the large bowel be completely empty. Not only does this prevent obstructive symptoms but it likewise prevents to a large extent infection. This can be accomplished by a low residue diet to a considerable degree. Food containing pulp that is nondigestible should be excluded completely from the diet. This will mean, therefore, that the diet will largely consist of bulk free carbohydrates and well cooked proteins with fats as necessary. The wisdom of eating well cooked vegetables is questionable. Such a diet obviously must be supplemented with a varying high vitamin intake particular emphasis being placed upon the B complex and vitamin C. Any secondary anemia must be corrected preferably by the transfusion of whole blood and particular emphasis must be placed upon the presence of a normal level of proteins both albumin and globulin in the patient's blood stream. Two to three soapsuds enemas daily are necessary for at least one week. All of these things are requisites even when the patient presents himself with an early lesion and no evidence of obstruction. It can be seen, therefore, a minimum of one week's hospital stay is required preliminary to surgical extirpation of the rectum. I cannot stress this too strongly.

(3) The third factor which has to do with good results includes those things that take place at the operating table. Of primary importance is the prevention of shock. Nowhere is it more important that shock be prevented and not treated than in the abdominoperineal excision of the rectum. This can be accomplished with ease. Such an operation is usually fairly lengthy and may be associated with a considerable amount of blood loss particularly if the patient be obese and blood vessels difficult to identify. The relative amount of blood and the amount of water that will be lost in the procedure, should be determined in advance. Rarely is this less than 500 cc. and 1500 cc. respectively. Accordingly at the beginning of the operation it is good practice to begin the intravenous injection of physiologic salt solution with or without five per cent glucose. As the operation proceeds the patient's pulse and blood pressure should be watched carefully and if there is any change noted suggestive of loss of fluid it is well to start a transfusion of whole blood. If the patient's condition remains stationary we delay beginning the transfusion as a rule until the latter

part of the abdominal operation. The reason for this is to protect the patient when the position is changed for the perineal approach, as it is at this time particularly that one notes circulatory change.

Nowhere is rigid asepsis more difficult to obtain or more necessary. The use of special clamps such as that devised by DeMartel is often of great value. Long instruments that make it unnecessary to manipulate the intestine too forcibly are of great help. Gentleness in the manipulation of the large bowel always pays big dividends. Particularly is this true in the obese patient where infections so easily occur in areas of traumatized fat. Great care must be taken never to leave such injured fat in the abdomen and particular care must be taken to obtain excellent hemostasis. We have found the local implantation of sulfanilamide both in the abdomen and in the perineal wound of great value. The combination of sulfanilamide with sulfathiazol is probably also well worth while. This is much more effective given locally rather than when given by mouth. Our experience so far with sulfanilylguanidine has not been sufficiently impressive to justify its continued use. If careful hemostasis is obtained in the perineal wound we have never seen the rationale of firm tight packing. It delays healing and makes the cavity rigid that is to be filled in.

I should like to close these remarks with a few words about the use of radium and roentgen ray therapy in the treatment of carcinoma of the rectum and anus. In our experience the response of adenocarcinoma of the rectum to roentgen ray therapy of all types has been disappointing. In inoperable cases so-called contact therapy has been of some value in cleaning up the inflammation around the rectal ulcer and in the prevention of hemorrhage. High voltage therapy at times is of aid in the treatment of pain from local extension of the cancer but here again the results are not comparable to those seen occasionally in cancer elsewhere in the body.

We have had no experience in the treatment of operable adenocarcinoma of the rectum with radium. Where such a lesion can be extirpated surgically we feel that this is the procedure of choice. We are carrying on a study at the present time concerned with the type and extent of reaction of inoperable rectal adenocarcinomas to various methods of radium therapy and while the results are far from complete we are not as yet convinced of the effectiveness of this form of therapy. This is not in keeping with the results of Binkley in treating early lesions at the Memorial Hospital in New York, which are most promising. It is well to bear in mind that the treatment of such a cancer with radium can never accomplish more than local removal of the lesion and

therefore will probably find its usefulness limited to early tumors even if an adequate technique can be developed.

Our experience with radium treatment of squamous cancer of the anal canal has been much more encouraging. This lesion represents about five per cent of the cancers of the rectum and anus that we see. It usually begins at the mucocutaneous junction and thus produces symptoms early. It metastasizes relatively late and then most commonly to the inguinal lymph nodes. This type of lesion is relatively radiosensitive and thus the result of the treatment can be followed easily. All of these factors make it possible to use radium here with a greater degree of safety. We do wish to caution against several complications that are unpleasant unless great care is used. The most important of these are abscess formation and radiation proctitis. Furthermore such treatment demands the most meticulous follow-up because of the chance of recurrence locally if an insufficient amount of radiation is given at the primary treatment. Its chief value is the preservation of normal rectal control of feces.

THE NICOLL FLAP OPERATION FOR EMPYEMA*

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Empyema, as referred to in this paper, is the condition with purulent fluid in the pleural cavity, variously referred to as thoracic empyema, empyema thoracis, pleural empyema, or purulent pleuritis, for which fundamental rules for treatment were established by the Empyema Commission during World War I⁸. These rules still are universally approved and accepted. It is the acute form we have in mind, though the operation to be described may be applicable to selected cases of chronic empyema. Tuberculous empyema, obviously, must have therapy of a different character.

INCIDENCE AND ETIOLOGY

While empyema is not a particularly common condition, it does constitute one per cent of the admissions to children's hospitals². In one American city with a population of approximately half a million 317 cases were hospitalized during a five year period¹⁴. Since general adoption of the spectacularly successful chemotherapy of pneumonia we

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may properly anticipate a definite reduction in incidence. Formerly about a tenth of all patients with pneumonia developed empyema^{3,4,5}. Treatment with type-specific serum is reported to have no appreciable effect on the likelihood of subsequent empyema. Cases so treated still yield a ten per cent incidence, whereas, in series of cases receiving sulfapyridine less than three per cent develop this complication^{6,7}. However, although eighty per cent of empyema is caused by pneumonia and the sulfonamides offer promise of definite reduction in total incidence, it is still a condition for which we must be ever watchful, one requiring prompt diagnosis and timely surgical therapy based on the fundamentals delineated by Evarts Graham and his associates.

A word of caution in regard to tuberculous empyema is appropriate. This condition may be definitely purulent and may prove confusing. Inasmuch as there is general agreement that radical drainage is here contraindicated, it is wise that pyogenic organisms be demonstrated in every case before instituting surgery.

METHODS OF TREATMENT

Once diagnosis has been determined, the study always including aspiration of pus, the next decision relates to selection of method and timing of therapy. Methods may range from simple repeated aspiration, most vigorously endorsed by Danna⁹, through the many forms of closed drainage with their fairly numerous proponents, to open drainage with rib resection. The last, with various modifications, is undoubtedly the method most widely used.

With open drainage, selection of a proper time for operation is all important. This is necessary to accomplishment of the essential principles of any successful treatment of empyema, briefly, complete evacuation of the pus without resultant pneumothorax. To Graham this means repeated aspirations until the exudate has become frank, creamy pus, and this is probably the criterion most commonly applied. Numerous other tests for selection of the proper time are advocated. For example, when not more than ten per cent supernatant fluid appears after the aspirated pus has stood in a test tube for twelve hours¹, when positive pressure in the pus-bearing pleural cavity is demonstrable manometrically¹⁰, when manometric readings of intrapleural pressure no longer vary with respiration but become fixed¹¹, when the specific gravity of the pus has reached a constant level¹², when fixation of the mediastinum can be demonstrated fluoroscopically by a skilled observer¹³. All aim at avoiding pneumothorax, especially while active pneumonia may be present and the vital capacity only slightly greater

than the tidal air requirements. The purpose is to ascertain the earliest time when adhesions between parietal and visceral pleura have developed sufficiently so the lung cannot pull away from the chest wall when the cavity is opened.

Many of the foregoing considerations may be entirely eliminated by employing the procedure first presented by Alexander Nicoll in 1934¹. In a very simple operative procedure he has combined the advantages of open drainage with prevention of pneumothorax as effective as that achieved with any form of closed drainage. By utilizing superficial tissues of the chest wall to form a flap an efficient valve results. Free, complete evacuation of pus is accomplished and the entrance of air into the pleural cavity is completely prevented. The operation is performed as easily and quickly as the simplest rib resection; there is no complicated apparatus requiring close attention; the results are uniformly excellent; and recovery is prompt with practically no tendency to chronicity. It offers the further advantage that maintenance of negative pressure in the pleural cavity permits operation without awaiting firm parieto-visceral adhesions; the surgeon may proceed as soon as the diagnosis is established. Finally, the site of the rib resection has lost its importance, for the pressure of the lung against the chest wall expresses the contained pus just as well when the opening is somewhat above the most dependent point. Actually it is desirable to have the resection high enough to preclude injury to the diaphragm and to avoid diaphragmatic interference with free exit of pus.

OPERATIVE TECHNIQUE

The patient is placed with the affected side uppermost, with the corresponding arm brought well forward, the forearm lying on the table before the patient's face. The site for resection of the rib is selected with respect to the location of the pus as found at aspiration, usually the eighth or ninth rib at a point below the inferior angle of the scapula, somewhat mesial to the posterior axillary line. It must be low enough to avoid occlusion by the scapula when the arm is subsequently dropped to the side, high enough to be free from diaphragmatic interference internally. It is well to note the amount of excursion of the skin so that the opening will finally lie midway between the two margins of the flap. It is also desirable that the aperture be not covered by too large a portion of the latissimus dorsi muscle, though this last is not extremely important as any necessary division of muscle fibers may be made with impunity.

The skin is prepared according to the operator's particular chromatic preference and anesthesia in-

stituted by local infiltration with one per cent novocaine with adrenalin. For the child, general anesthesia is preferable, open drop ether being entirely acceptable.

The incision is made to outline a flap ten centimeters long and of the same width, base upward. Orient the field so the site of resection will be well up at the base of the flap, remembering that the



Fig. 1

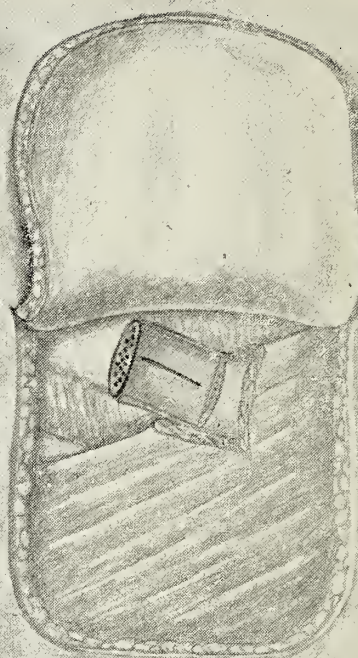


Fig. 2



Fig. 3

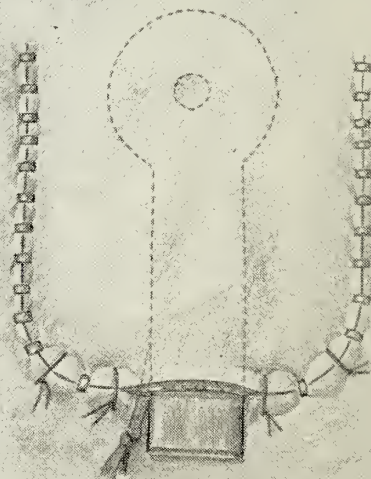


Fig. 4

opening must lie sufficiently toward the medial margin of the flap to be equidistant from both margins when the arm and shoulder are lowered. The flap should be slightly larger for the stout patient, very little, if any, smaller for the young child. The lateral margins of the flap should be accurately vertical, the lower margin horizontal, the corners not too sharply square.

The incision is carried through the skin and subcutaneous tissues, cleanly dissecting the entire flap free from the fascia overlying muscle and ribs, tunneling upward slightly to free the area about the rib to be resected. The flap, consisting of skin and underlying areolar tissue, is reflected upward (Fig. 1.) The latissimus dorsi is then incised, if necessary, for exposure. Bleeding points are ligated. Novocaine is injected subperiosteally, an H-shaped incision made in the periosteum, which is then freed from the rib anteriorly and posteriorly, incising the attachments of the intercostals carefully. Two and one-half centimeters of rib is resected. Novocaine is injected into the parietal pleura. An aspiration should be made at this point to prove the site overlies the portion of the pleural cavity containing pus. (This may prevent later embarrassment.) A horizontal incision two centimeters in length is made through the pleura, the opening being immediately closed with a finger tip. (Fig. 2). During expiration the previously prepared empyema button and drain are inserted through the opening, the flap brought down over it and pressure applied to prevent flow of pus or ingress of air. (Fig. 3.)

The incisions forming the lateral flap margins are carefully closed with Michel skin clips of large size, closely placed and quite firmly applied, as otherwise they are apt to be displaced later. A non-absorbable tension suture is placed at each angle and one to each side of the protruding portion of the drain, with one or two clips laterally in the horizontal portion of the incision. (Fig. 4.)

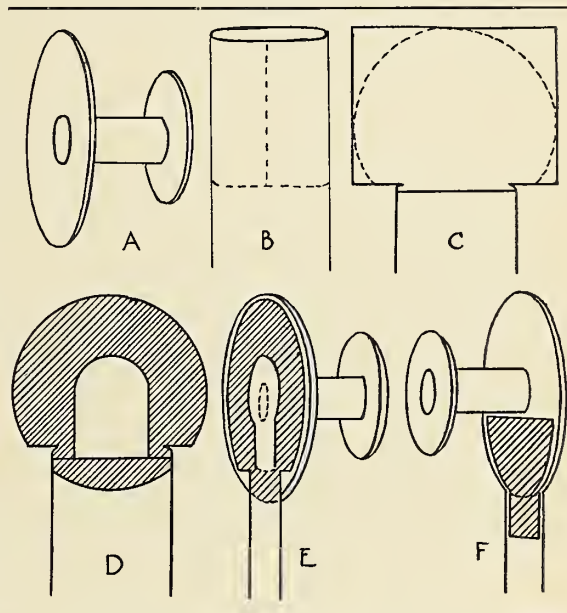
In most instances it is permissible to allow emptying of the pleural cavity to proceed at once. This will occur with free discharge of pus during each expiration. With inspiration the flap is drawn firmly against the opening through the empyema button and no air can enter. In many cases it may be desirable to apply pressure with a pad, to be released at intervals allowing a quantity of pus to escape. This can be entirely released within twenty-four hours. Thereafter no part of the bandage must touch the central portion of the flap and only very loose fluff gauze should be applied at the lower portion, never enough to cause pressure which might impede drainage.

A horseshoe-shaped form of firm cardboard is

well padded and fastened about the wound in inverted position with adhesive strips. It must be large enough that all parts of it will be well above and to the sides of the flap. This protects the area from painful pressure and further prevents the dressings from interfering with efficient valvular functioning of the flap.

As a rule the patient is allowed up early, depending largely upon his state of pneumonia convalescence.

The clips and sutures remain at least eight days. When removed from the lateral portions of the incision flamed strips of adhesive are applied snugly to reinforce the wound. These must, however, be short of extending across the flap.



The empyema button and drain are withdrawn when drainage has practically subsided and x-ray examination shows complete expansion of the lung. That time varies and we have probably left our drains in longer than necessary, feeling that we would rather err on the side of caution. Nicoll thinks nine days is usually more than ample, but cautions that when bronchial fistula is present, as indicated by pneumothorax, negative pressure drainage must be insured until the bronchial fistula has closed. The drain had then best be left in place until the pneumothorax has disappeared. He suggests that in the long drawn out case of this type the wound in the chest will become established after a time and will continue the valve action after the drain is withdrawn.

The button referred to is the ordinary flanged Wilson empyema drain of soft rubber. One end of a Penrose drain is trimmed so that its margins may

be cemented to the external flange to form a tight channel extending through the opening in the button through the lumen of the Penrose drain and out beneath the lower margin of the flap. (Fig. 5.) The withdrawal string is merely a piece of umbilical cord tape or stout braided silk which is firmly tied around the button and left long enough to project beneath the flap. The earlier button prepared by Nicoll consisted of the Wilson empyema button with a strip of one and one-half inch rubber tissue sutured to the lower margin of the external flange. This was quite satisfactory but not quite as efficient as the modification later devised and described above.

The following cases are reported as indicative of the course of acute non-tuberculous empyema treated by Nicoll's flap operation. All have had at least a year of post-operative observation, have had no recurrence, and are completely well.

CASE REPORTS

Case 1. M. M., female, age nine. Return of fever during convalescence from lobar pneumonia. Sulfonamides had not been employed. Pus demonstrated by thoracentesis. Flap operation was done under ether anesthesia. Free pus drainage. Drain removed on sixteenth day. Mere trace of thin drainage at that time which quickly subsided entirely and the wound was healed within three weeks.

Case 2. G. C. R., female, age fifty-five. Signs of pleural effusion and temperature rise sixteen days after subsidence of bronchopneumonia which had been treated with sulfa-pyridine. Metastasis suspected because of history of mastectomy for proved carcinoma two years previously. Aspirated fluid showed no evidence of malignancy in the sediment and pyogenic character was established. Treated by performing a flap operation under local anesthesia. Copious purulent drainage. Drain removed on the fourteenth day. On the seventeenth day the drainage was a mere serous ooze and the wound practically healed.

Case 3. D. B., male, age fourteen. Fever and signs of pleural effusion followed what had been, apparently, a low grade pneumonia for which the family physician had not been called. Under observation and conservative treatment temperature subsided. On the sixth day, with rise of temperature, there was a coughing attack with production of a foul odor, but no sputum, even after periods of attempted postural drainage. Apparently a small bronchial fistula had formed. Aspiration revealed straw-colored, faintly turbid fluid with the same foul odor. A tuberculous process was ruled out as far as could be determined. Repeated aspiration on the twelfth day showed a thin foul pus. The odor continued to be exhibited with coughing, and only small amounts of sputum. Nicoll's operation was done. The foul drainage was profuse at first, but after a few days subsided to a small amount. The drain was left in until the fourteenth day. Patient's condition improved rapidly, but a small amount of drainage persisted for six months, finally terminating after incision of a thinned area in the flap where pointing had occurred. He then made a complete recovery. This is an example of the drainage tract persisting under the flap until a bronchial fistula has healed.

Case 4. E. P., male, age twenty-three. Typical return of fever with sweating following lobar pneumonia. Sulfonamide not used. On demonstration of pus the flap opera-

tion was done without delay. Drain removed on the ninth day. Prompt subsidence of the purulent discharge. Persistence of a small amount of thin, sero-sanguineous discharge from the soft tissues requiring probing a few times and removal of granulations. Healed in six weeks.

Case 5. C. H., male, age eight. Empyema diagnosed by aspiration of pus during convalescence from lobar pneumonia. Had not had a sulfonamide. Flap operation under ether anesthetic. Free drainage subsiding to a small amount after five days. Drain removed with a few breaths of ethyl chloride on the tenth day. Complete recovery and wound healed in twenty-six days.

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X-RAY STUDIES OF THE FEMALE PELVIS*

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At birth the problem of the attending physician concerns itself with the management of the interaction of three important factors. First, a force generated by uterine contraction; second, other musculature acting upon an object designated as the passenger which must traverse a given fixed passage; third, the pelvis whose resistance is increased by the impediment of varied soft tissues.

The final result of any labor, its difficulties or success, are in direct proportion to the variations which occur in each of these three factors. The force of uterine contractions, their regularity, duration, and intensity are greatly modified by the general mental and physical well-being of the individual, the co-existence of acute or chronic disease, endocrinology, and numerous influences not so well understood. No less are the variations present in the passenger, the foetus, both as to size, maturity, malformations, and finally positions of presentations, with their corresponding mechanism of labor. The resistance offered by the passage may be divided into two classes, that offered by the soft parts and the more fixed bony pelvis. Malplacements of the

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placenta, inflammation, neoplasms, age and physical development of the individual add to the confusion of soft part resistance. In truth only the bony pelvis may be viewed in each individual as a fixed quantity and it is in connection with variations of this one apparent constancy that I wish to present the following.

That portion of the bony pelvis which is of significance from an obstetrical viewpoint is the pelvis minor or true pelvis. It forms the birth canal and is made up of the fusion of bones arising from the following centers: the pubis, the ischium, the ilium and the sacrum with its attached coccyx. The birth canal may be further divided into three planes, the superior aperture or inlet, the mid-plane, and the outlet. Variations in diameters of these planes, or shape of the canal at any given plane are altered by the fusion which occurs early in life, sex of the individual, race, endocrines, mineral-vitamin metabolism and trauma. In as much as the shape of the birth canal and its size, which at the time of labor is fixed, are so important as to the resistance offered an object traversing its passage, little wonder that efforts have been unceasing and will continue to correctly analyze the dimensions of the birth passage.

Vesalius in 1543 made the first accurate descriptions of the pelvis. He demonstrated that the pelvis was an unyielding bony ring and exploded the fallacy that birth could only be accomplished by a separation of the bones at the pubis. Smeille in a work on mid-wifery published in 1752 gave the first accurate description of the various measurements. It was he who established the antero-posterior diameter of the inlet, and our present bimanual method of determination is attributed to him.

In the decades of scientific medicine obstetrical and anatomical texts inform us that primary differences exist between the male and female pelvis as to depth, size of bones, contour, and shape of the birth canal in its availability as a passage for the foetus. Our thinking has accepted the expression "Average normal female pelvis" and we recall the following dimensions: Antero-posterior diameter of the inlet eleven cm.; transverse diameter 13.5 cm. Rt and Lt oblique 12.75 cm. Transverse of the outlet or bi-ischial tuberosity eleven cm.; antero-posterior of outlet, the lower symphysis to coccyx 9.5 cm. That contracted pelvis, funnel pelvis, asymmetrical, large and small variations from the accepted normal did occur was soon recognized, with the result that pelvis mensuration in the living woman followed.

Baudelocque in 1810 initiated external measurements and devised an instrument for measuring the external conjugate by which the true antero-posterior

diameter of inlet or obstetrical conjugate could be estimated. Since that time pelvimeters of all kinds and forms have been devised for making external and internal measurements. Today, external pelvic mensuration is a part of all pre-natal care. The external diagonal conjugate, the diameters of the crests and spines of the false pelvis, and outlet measurements of the bi-ischial tuberosities are estimated. That this is often misleading and incorrectly interpreted is the sad experience of each of us. It has become obvious that external measurements of the false pelvis, over the soft parts, do not necessarily give accurate information as to the size of the birth passage. We continue to keep in mind the physical build of the patient, often delving into the family history as to the nature of previous family labors and have even confined our scientific measuring to the use of the first at the outlet, and an actual test at term to see if the foetal presentation may be made to enter the inlet.

Today a new instrument is available to aid in establishing accurate knowledge of the dimensions and contour of the birth canal, the roentgen ray. As early as 1897 it was reported that the x-ray often gave valuable information as to the shape of the birth canal but that measurements were inaccurate because of distortion.

Thoms, working in connection with Yale University, has contributed the most in accurate x-ray pelvimetry, correcting for distortion, allowing for pelvic inclination, and today offers a special table and technique for this purpose. Many recent, more economical, and more practical methods are appearing in the literature.

Reuter and Reeves, Duke University¹, have devised a simplified method, a modification which we have used for the past year in measuring pelvises.

In 1933 Caldwell and Moloy² working in connection with Columbia University established a new classification for female pelvises, and more recent communications have established definite effects upon labor. Their classifications³ is based upon anatomical variations of the architecture of the pelvis, caused by racial, sexual, or other complex inherited influences rather than by pathologic changes in the bones themselves.

They divide pelvises into four distinct classes each having primary and secondary characteristics. Variation in the particular shape of the inlet determines the primary class; first the gynecoid pelvis in which the inlet is round or nearly round; second, the anroid in which the inlet is heart shaped, the greater transverse diameter being far posterior and the forepart of the pelvis narrowed; third, the anthropoid in which the longest diameter of the inlet is antero-

posterior, and fourth, the platypelloid or flat pelvis in which the antero-posterior diameter is less than the transverse.

GYNECOID PELVIS

The gynecoid pelvis with its rounded inlet is accompanied by a sacro-sciatic notch which will admit two or three fingers. The side walls of the pelvis are straight, the ischial spines are not prominent, and the sub-pubic arch is quite rounded. The sacrum tends to be average in width with a gentle curve.

ANDROID PELVIS

The android pelvis (or male pelvis) with its heart shaped inlet, has a somewhat narrowed fore-pelvis. The greatest diameter of the inlet transversely falls far posterior, the sacro promontory juts forward into the inlet limiting the available space and producing a heart shape. By necessity the sacro-sciatic notch is small. The spines are prominent. The side walls tend to converge forming a funnel. The sub-pubic arch is straight and deep. The total depth of the pelvis tends to be greater, bones heavier. The sacrum is more straight, tending to extend itself forward into the lower portion of the birth passage, adding to the formed funnel shape and limiting the available room in the plane of the outlet.

PLATYPELLOID PELVIS

The platypelloid pelvis is a flat pelvis, probably rachitic. It is oval in shape with transverse diameter being longer than the antero-posterior. The fore-pelvis is greatly flattened. The sacro-sciatic notch tends to be narrowed. The spines are not prominent, and the spinous ligaments usually are increased in length. The side walls of the pelvis are divergent or flared. As the pelvis seems to have flattened in its inlet it has compensated by diverging at the outlet. The sacrum may be short and posterior, the sub-pubic arch shallow, the depth of the pelvis decreased, and the arch more rounded.

ANTHROPOID PELVIS

The anthropoid pelvis or ape pelvis, with the antero-posterior diameter greater than the transverse, has a sacro-sciatic notch which is deep and flaring. The side walls tend to be straight or converging, the spines a little prominent, the sub-pubic arch straight, and the depth of the pelvis increased.

This classification established by Caldwell and Moloy, based upon anatomical studies of pelvises, has been confirmed by x-ray studies. It is known to exist in both the male and female⁴ until we are now in a position to believe that rather than having a male and a female type of pelvis we may have any one of four variations. More important than that

distinct classes exist, is that a pelvis may and usually does have the characteristics of an assimilated nature attributed to different classes. It readily follows that with such variation in architecture and actual dimensions as established by x-ray measurement, all other factors being equal, no two labors could be expected to have identical characteristics.

Just as we have three planes of the pelvis, the inlet, mid-plane, and outlet, there are three cardinal movements of any mechanism of labor. 1. Descent and engagement in the inlet. 2. Rotation at the mid-plane from the transverse or oblique diameter to an antero-posterior diameter. 3. Flexion or extension at the outlet to accomplish delivery of the presenting part. As the foetus descends and comes in contact with the inlet, it will seek a diameter offering the least resistance which in the gynecoid pelvis is transverse, in the platypelloid transverse, in the android posterior oblique, in the anthropoid directly posterior or directly anterior. At the mid-pelvis, the curve of the sacrum, protrusion of the spines and the pelvic diaphragm all tend to rotate the presenting part to an antero-posterior diameter as it descends. At the outlet the levator muscles and fascia tend to change the presenting part's axis from that of descent to one of forward extension or flexion, bringing the presenting part under the sub-pubic arch. Changes in the bony pelvis may impede or alter this process by increasing or decreasing the amount of available space at any given level of descent.

The importance of the architecture and measurements has its direct corresponding effect upon mechanism of labor involved. Just as the force acting on the passenger forces it through the passage, the passenger will follow the least resistance adapting itself to the greatest available space at any given plane in the pelvis. Should the architecture and dimensions of the inlet offer too much resistance, the passenger will be unable to enter the inlet or engage. Should the fore-pelvis be narrowed it may be necessary for the occiput to rotate posteriorly as it descends. If the spines are quite prominent and side walls converge, dilatation will be slow as the presenting part will be held away from the cervix and prevented from descending. Should the side walls converge, as labor progresses, additional moulding must occur, and arrest of progress is likely. If the inlet is flat the presenting part must enter and descend in the transverse position, unable to rotate until it is completely past the inlet, hence, transverse arrest. If the sacrum juts forward it may form a shelf on which the presenting part will pound without progress. The sacrum may extend forward enough to limit the space available at the outlet,

thus preventing the presenting part from passing under the sub-pubic arch. Finally the sub-pubic arch itself with its numerous variations in shape and dimensions may arrest the progress of the presenting part.

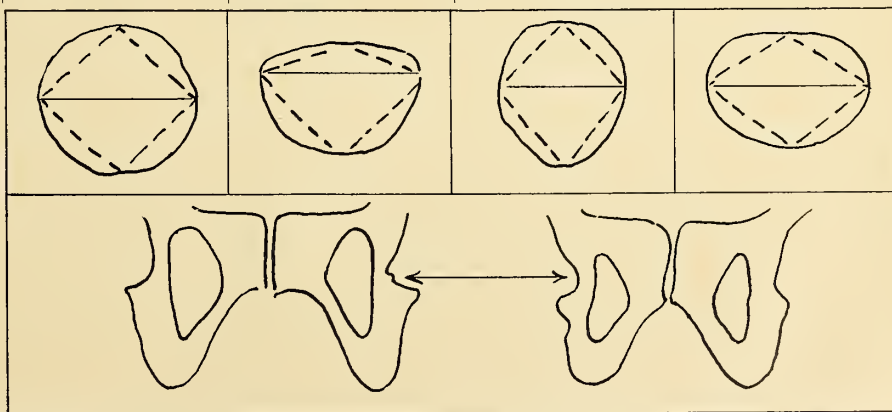
The x-ray studies of a female pelvis enable us to evaluate each of these factors. From a view of the inlet we can better understand its shape and where the greatest space is available. A lateral plate illustrates the curvature of the sacrum and the size of the notch. A view of the sub-pubic arch is an accurate picture of the space at the outlet. These studies in architecture plus actual measurement of

the important diameters provide a combination analysis of the path of resistance heretofore lacking.

A study of thirty successive primiperae examined in our clinic revealed sixteen gynecoid, five anthropoid-gynecoid, six android-gynecoid, three platypelloid. Eleven cases of dystocia were predicted. Of these, one was "inlet," one was "mid-plane," one was "transverse rest." Eight were "outlet." No dystocia was predicted in the remaining nineteen. In this group, one case moved away and one case aborted. One case in the remaining nineteen developed outlet dystocia. Upon reviewing her pictures, we found a long protruding sacrum extending into the outlet

VARIATIONS IN THE FEMALE PELVIS WITH THEIR CLASSIFICATIONS

	Gynecoid	Android	Anthropoid	Platycelloid
	Normal Pelvis	Male Type		Broad or Flat Type
Shape of Inlet as a Whole	Round to slight transverse ellipse	"Heart Shape" or wedge-shaped	Long oval; narrow transverse	Flat transverse ellipse—short A-P diameter
Shape of Post. Segment	Rounded and ample	Wide and flat	Long and narrow	Wide and flat; relatively equal to ant. pelvis
Shape of Ant. Segment	Capacious—deep	Narrow and Shallow	Long and narrow	Wide and flat
Shape of Sacrosciatic Notch	Average female wide-2-3 f. av	Narrow male deep 2 F. av.	Very wide anthropoid 3 F. plus	Under average; Fore-shortened 2 F.
Sacrum:				
a. Width	Average or wide	Average or wide	Narrow	Average
b. Length	Average	Average	Long (occ. 6 segments)	Average
c. Inclination	Average—hollow	Forward—straighter shallower	Backward—Steep	Average—straighter shallower
Ischial Spines	Average "Knobby"	Sharp—protruding	Anthropoid prominent	Average
Shape of Sidewalls	Straight to divergent	Usually convergent	Straight to divergent	Straight
Shape of Sub-pubic Arch				
a. Size	a. Moderate to wide	a. Narrow acute	a. Wide	a. Moderate
b. Shape	b. Well curved female "normal arch" with short rami	b. Straight edge male with large rami	b. Well curved female	b. Well curved female
c. Variations	c. Narrow to wide large to small	c. Narrow to wide; large to small	c. Narrow to wide; large to small	c. Narrow to wide; large to small
Bones	Average to delicate	Thick and heavy	Average to delicate	Average to delicate
Frequency				
a. White	41.4%	32.5%	23.5%	2.6%
b. Negro	42.1%	15.7%	40.5%	1.7%
c. Sloane Hosp.	50.6%	18.5%	26.5%	4.3%
Physical Types	Av. shoulders narrow waist broad hips curved legs	Square torso, post. thick waist straight legs; obesity hirsutism	Wide shoulders narrow hips, long torso, straight legs	Mixed rachitic



which we should have recognized but did not. It so happened that we delivered the same woman eleven and a half months later and exactly the same thing happened. We made one prediction of mid-plane which was wrong. In reviewing her picture, the prediction was based upon the narrowness of the hind pelvis overlooking the large iscial-spinous diameter which permitted easy rotation. One outlet dystocia was complicated by a prolapsed arm following induction of labor indicated by eclampsia.

CONCLUSION

Architectural and dimensional studies by x-ray are valuable assets in pre-natal prognoses. The Caldwell and Moloy classification of pelvis is destined to exist as a more accurate description of pelvic types found in normal obstetric practice.

No.	Age	A.P.	Trans.	H.P.	F.P.	I.S.	Type	Prog.	Labor
1.	27	13	12½	5	8	10	Gyn-A	O.D.	*Correct
2.	24	13½	12½	5	7.75	10	Gyn-A	N.D.	Correct
3.	27	13	12½	5	8	11	Gyn-A	N.D.	Correct
4.	23	13	12½	5	8	11	Gyn-A	N.D.	Correct
5.	23	13	13½	5½	7½	10½	Gyn-AS	N.D.	Correct
6.	35	13½	14	5½	8	12	Gyn-Arh	O.D.	*Correct
7.	25	13	13½	5½	8	11	Gyn	N.D.	Correct
8.	29	12½	13½	4½	8	11	G-And	O.D.	*Correct
9.	21	12½	14	5	7	12	Gyn	N.D.	Correct
10.	20	12	13	4½	7½	10	And-G	O.D.	*Correct
11.	36	12	14	4	8	11½	Gyn	N.D.	Correct
12.	24	12	13½	4½	7½	12	Gyn	N.D.	Correct
13.	22	12½	14	5	7½	11½	Gyn-Sac	O.D.	*Correct
14.	23	12½	13½	5	7½	11½	Gyn	N.D.	*Wrong
15.	29	12	12.75	4¼	7.75	10	Gyn-Sac	O.D.	*Correct
16.	19	12	12½	5	7	10½	Gyn	N.D.	Correct
17.	21	12	12½	5	7	9½	Gyn-Ad	O.D.	*Correct
18.	26	12½	12½	4½	8	10½	Gyn-Ad	N.D.	Correct
19.	25	12¼	12¼	5	7¼	11	Gyn-Ad	O.D.	*Correct
20.	21	12½	12½	5½	7	11	Gyn	N.D.	Correct
21.	28	11½	13½	4½	7	11	Gyn	N.D.	Correct
22.	26	11½	12	4½	7	12	Gyn	N.D.	Correct
23.	22	11½	13.75	3½	8	12½	AND	N.D.	*Wrong
24.	27	11.75	12.75	4.75	7	11	Gyn	N.D.	Correct
25.	32	11½	11¼	4½	7	10	Ant-S	Sect	*Correct
26.	29	10.75	13	4.75	6	11½	Platy-G	N.D.	Correct
27.	29	10.75	13	5	5.75	11½	Platy	Tr arr	*Correct
28.	27	11½	13½	5	6½	11½	Pl-Gy	O.D.	*Correct
29.	29	11½	12.75	4½	7	11	Gyn	N.D.	Moved
30.	18	13	13½	5	8	11	Gyn	N.D.	Aborted

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Dr. Brittain Payne points out in a recent issue of the American Journal of Ophthalmology that lenses, the upper one-fourth of which is of dark red glass, have recently been introduced for the benefit of the color-blind. The principle of the glasses rests on the filtering out of the "green light"; when a light is seen through the red segment, the motorist knows that either the stop or the caution signal is in operation. All types of color-blindness react in the same way to the glasses. The motorist knows he must stop when he sees any light whatsoever and does not have to depend upon a change of intensity.—Sight Saving Review.

MANAGEMENT OF EDEMA AND NEPHRITIS IN CHILDREN*

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There is no place in medicine where the problem of treating the patient rather than the disease is of greater importance than in the management of nephritis of children. Too often the physician permits himself to be blinded by one factor of the disease to the point where other factors are neglected. This is especially true in regard to the nutritional status and water balance of the child. Frequently even greater harm is done in the management of so-called foci of infection. The view points herein presented are directed toward the corrections of such fallacies. I freely admit that many conclusions I have reached are ultra conservative but I believe the clinical results attained make them justified.

The pathology involved in nephritis is of utmost importance in both prognosis and treatment. One may, however, simplify the problem to a classification based on clinical findings. By this means the treatment becomes more easily defined and I believe often leads to more definite results. One also avoids many misleading arguments as treatment is based on the clinical rather than the pathological aspects. By such a classification we separate nephritis into nephritis with or without retention, hypertension, anemia, a definite source of infection, edema, etc. It is also, of course, important to know whether the nephritis is acute or chronic. By all means, however, it is important to evaluate the child's nutritional status.

The management of edema in children is as a rule simpler than that in adults. This is true because of the factors which produce this edema. Edema in children in most cases is a result of a lowering of the serum protein and only occasionally on a cardiac basis. This is especially true of the edema of simple hypoproteinemia. Edema represents the accumulation of fluid in the tissues to the point of disrupting tissue integrity. Prior to this, however, fluid accumulates in the tissue and this condition is known as pre-edema. The best index of this is abnormal weight gain and such abnormal gain should be recognized and managed by the physician.

It has been demonstrated many times that the serum proteins as colloids maintain a definite os-

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otic tension, and that lowering of this osmotic tension will lead to abnormal retention of fluid in the tissues. This tension has been estimated to be about thirty mms. of mercury. Methods of determining the colloidal osmotic tension of the serum are available and may be used. In most instances, however, the determination of the total serum proteins will suffice in aiding in a diagnosis. In general a serum level of five grams per cent or below will result in fluid accumulation in the tissues. The problem of edema as a rule is not always that simple, especially where it is present to any degree.

Although in edema the role of salts and especially the sodium salts, is less than was formerly supposed, nevertheless it is apparently important. Sodium salts and especially the chlorids are primarily of the plasma, while potassium salts are primarily of the cell tissue. It is the sodium chloride which flows in and out of the tissue. Where the sodium intake is high the sodium chloride is deposited in the tissue, the water necessary to make the solution isotonic follows and where the osmotic tension is already altered may and frequently does result in edema. It is not until later that the sodium chloride is excreted. In the normal individual this requires about three days for complete excretion.

In reducing the sodium chloride intake, we must watch that the serum chloride is not depleted because of the fatigue and irritability that may result. It is well to occasionally supply chlorides in such form as potassium or ammonium chloride.

As has been previously stated the most common form of edema seen in children is that of simple hypoproteinemia. The onset is usually insidious and is most apt to follow any illness of long duration which results in a lowering of the nutritional status. It has been my experience to observe this most often after empyema drainage. This probably occurs because of the time involved during which the child's food intake is lowered. Diagnosis is based on the history of poor nutrition, failure to find any other cause, and the finding of a lowered serum protein by the laboratory.

The condition is of little significance in itself but rather is a warning that the child's general nutrition is under par. Treatment is directed toward correction of the nutritional status in all respects, and transfusions are specific.

Hypoproteinemia assumes more dramatic proportions in the edema of nephrosis or the nephrotic type of glomerulonephritis.

In nephrosis all the factors in regard to proteins and electrolytes must be taken into consideration. The most important phase, however, is the restoration of a higher colloidal osmotic tension. The tre-

mendous outpouring of albumen and resultant lowered serum protein is probably the main cause of the profound edema which frequently exists. This outpouring of protein also leads to the production of a negative nitrogen balance which seemingly is an integral part of the syndrome and must be coped with accordingly.

The restoration of the normal serum protein seemingly must be preceded by the restoration of a normal nitrogen balance. Because of this factor amino acids must be supplied and frequently must be supplied parenterally. According to Farr¹ casein hydrolyate given in solution intravenously seems of great assistance here and frequently will bring about remission where other methods have failed. The use of such a product seems very rational.

Under ordinary circumstances the administration of blood plasma is of tremendous value and is almost specific. Usually this is most easily obtained by decanting off the serum from whole citrated blood after the cells have settled out. Multiple small transfusions of plasma should be given rather than single large amounts because over burdening of the circulatory system is avoided. The serum concentrates are perhaps of even greater value because of this factor and one may administer fourteen to twenty-eight grams of serum protein per 100 ccs. of solution by this means. It is interesting to note then when transfusions of plasma are given the individuals serum proteins are not raised to any great extent while the diuresis is frequently profuse. Apparently some unknown factor is present in assisting the transportation of fluid from the tissue to the kidney.

Acacia is frequently used although it is rarely necessary, because of the good results obtained from serum. There are conflicting reports on the possible toxic results which probably can be avoided by care in administration.

The use of other diuretics in the edema of nephrosis is open to question. Probably one is safe if potassium nitrate is used. Personally I avoid diuretics as much as possible because of the established value and need for serum protein. Sodium salts, of course, are kept from the diet. The use of thyroid seems to have little foundation. A lowered metabolism has been noted in these children which has led to the use of thyroid extract. This lowered metabolism, however, is probably a result of an increased weight from edema. It is also probable that the negative nitrogen balance is also an important factor here. Thyroid extract in a few cases has given little result.

The diet should be balanced and nutritious, high in proteins which can best be supplied by meat and eggs, and gelatines are of value in administering

amino acids. Vitamins should be supplied in adequate amounts and in as natural a form as possible. If anemia is present this is usually nutritional in nature and is of the hypochromic microcytic type. Iron should be supplied by the ferrous salts especially in the form of the sulfate. Adequate amounts of copper should also be supplied.

The management of acute nephritis in children calls for utmost conservatism. It is amazing to note the number of remarkable recoveries that occur when the patient is treated rather than the disease per se. Perhaps the greatest failure is to maintain a proper water balance, which often leads to acidosis and not only makes the child more ill but actually increases the burden on the kidneys.

If the nephritis is mild there should be no limitation of fluids. If the patient is ketotic, glucose in five to ten or even twenty per cent solution should be supplied in adequate amounts by vein. Even in the severe cases with oliguria the fluid balance should be maintained by the same means. Naturally if edema is forming at an alarming degree, care must be taken as to the amount of fluid given but even here any marked limitation must be approached with care. Intravenous hyperonic glucose solution is frequently of great benefit in restoring normal kidney function where oliguria is present. One must remember that in acute nephritis there is general capillary damage and all the edema is not a result of kidney damage. Glucose solution aids in detoxification of this general toxic process.

The use of very hot sweats is to be heartily condemned as being of little value and of potentially great harm and most recoveries attributed to this form of barbarism occurred in spite of the treatment. Warm tubs, however, seem frequently to be soothing to the little patient. Small transfusions occasionally are of assistance in acute nephritis. Naturally where edema is present, sodium is kept from the diet and from the intravenous solutions.

Inasmuch as most acute nephritides are a result of an acute infection elsewhere in the body, the primary infection for the most part should be treated as it would were the nephritis not present. If there is no retention by the kidney, the sulfanilamide derivatives may be given if they are indicated as for instance in streptococcus throat. If retention is present the dosage is determined by watching the level in the serum which should be done any way.

As recovery occurs in acute nephritis, again the nutritional status must be carefully maintained. A regular nutritious diet is given, the vitamin intake kept at a high level, and any anemia which might be present is corrected.

In any nephritis with retention magnesium sul-

fate given by mouth to promote purgation occasionally is of value altho its use must not extend to debilitation of the patient. One must remember that such purgation may lead to a marked loss of fixed base with consequent acidosis and the same problem should be watched in chronic nephritis.

The food intake during acute nephritis or during an exacerbation of chronic nephritis depends to a large extent on the patients ability to retain food. If marked nausea exists multiple small transfusions aid in maintaining a normal nitrogen balance. Possibly intravenous casein hydrolysate will be of use here when it becomes available. It is unfortunate that the simple tests available for determining non protein and urea nitrogen are so often abused. The slight elevation of this nitrogen is not necessarily an index of the degree to which proteins should be eliminated from the diet. The substances involved in the tests are not particularly toxic. We do not have any satisfactory tests for the elements which produce the toxicity of uremia. I admit that as yet the tendency for most physicians, including myself is to reduce the protein intake during uremia. Perhaps time will prove this to be a fallacy, certainly in most instances. We cannot state that a normal protein intake seems to hinder these children.

The problem of foci of infection in nephrosis or chronic nephritis is being subjected to close scrutiny and being condemned to a considerable extent. The removal of teeth or tonsils as either treatment or prevention is one fraught with danger. Certainly during the acute stage no such procedure should be attempted. I have three cases of nephrosis which failed to make complete recovery until after careful removal of abscessed teeth. The danger of drawing any conclusions from only three cases is obvious, however, if definite foci of infection exists in the teeth they should be removed. One must be careful not to do this while the child is acutely ill or while the infection in the teeth is acute. If abscesses are present I routinely administer sulfapyridine for a few days preceding the procedure. Apparently, tonsillectomy does not prevent nephritis, but possibly actually increases the incidence. The physician must use his judgment here in determining whether the tonsils are infected sufficiently to warrant removal. Certainly if nephritis in any form is present, tonsillectomy will increase the difficulty.

CONCLUSION

In conclusion, may I state that the problem of management of edema and nephritis in children is one of being conservative. The child's general health and nutritional status must be kept on a logical basis in all respects. The vitamin levels and the nitrogen balance must be kept at a normal level, and anemia

must be combated. The convalescence is marked by long and diligent care. The patient at all times must be treated in his entirety. Chilling and infection should be avoided as much as possible.

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CHANGES IN THE BLOOD IN TUBAL PREGNANCY

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It has been aptly stated that the diagnosis of ruptured ectopic pregnancy should be made from the symptoms as described over the telephone. The loss of blood is so gradual in some cases, however, that the usual cataclysmic symptoms of pain and shock are not present. In many cases of early intrauterine pregnancy, furthermore, women may complain enough of pain to arouse the suspicion that the pregnancy may be tubal.

When there is a hemorrhage into the peritoneal cavity, as in ruptured tubal pregnancy, the liquid portion of the blood promptly returns to the general circulation but the cells return more slowly. This results in a decrease in concentration of hemoglobin and of erythrocytes in the circulating blood. The following cases illustrate how this fact may be advantageously taken into consideration when the diagnosis is uncertain.

CASE REPORTS

Case 1. A white woman, aged thirty-two, began to complain of severe pain in her lower abdomen about seven weeks after her last menstrual period. She did not faint and there were no signs of shock. Hemoglobin determinations and erythrocyte counts were practically unchanged on three successive days. The pain gradually diminished. The patient subsequently went through a normal pregnancy and delivery.

Case 2. A woman, aged twenty-seven, complained of a sudden sharp pain in the lower abdomen about six weeks after the onset of her last menstrual period. She did not faint and was not in shock. Within a period of twelve hours, the concentrations of hemoglobin were eighty-two, eighty-five, and eighty-seven per cent, and erythrocyte counts were 4,230,000, 4,350,000, and 4,440,000. A diagnosis of ruptured tubal pregnancy seemed definitely ruled out because there was no decrease in the concentration of her blood. Since she complained so bitterly of pain and since she had had several attacks which resembled appendicitis previously, an exploratory operation seemed justifiable. At operation, twenty-four hours after the onset of symptoms, the uterus was found to be the size, color and consistency of a two months' pregnancy. Both tubes and ovaries were normal. A mildly inflamed appendix was removed. She subsequently carried her pregnancy to term.

Case 3. A white woman, aged thirty-three, fainted while doing some housework, about seven weeks after her last

menstrual period. When seen at her home an hour later, the concentration of hemoglobin was eighty per cent (Tallqvist method). Two days later, she had some spotting of blood from her vagina and again fainted when she arose from her bed. On this date the concentration of hemoglobin was sixty per cent. The next morning, in a hospital, the concentration of hemoglobin was forty-eight per cent, with 2,520,000 erythrocytes in each cu. mm. of blood. At no time had she noticed any pain in her abdomen. Her blood pressure was always over ninety-five systolic.

A diagnosis of ruptured tubal pregnancy was made. At operation the fetus was found within an intact sac being expelled through the end of the tube into the peritoneal cavity. This "tubal abortion" explained the gradual loss of blood without more acute symptoms.

Case 4. A single girl, aged eighteen, had had her last menstrual period about seven weeks previously. She fainted at work and began to complain of pain in the lower abdomen and under the right shoulder blade. Some spotting of blood occurred. About six hours after the onset of pain and fainting, the concentration of hemoglobin was seventy-five per cent, with 4,020,000 erythrocytes in each cu. mm. of blood. Although she refused to admit the possibility of pregnancy, it was suspected that an abortion had been induced. About twelve hours later, after a bowel movement, she again fainted and went into shock. Concentration of hemoglobin at this time was fifty-five per cent, with 2,870,000 erythrocytes. At operation, a typical ruptured tubal pregnancy was found. Convalescence was uneventful.

A hundred million cubic feet of oxygen are used yearly in our hospitals, saving life and alleviating pain.—A. Cressy Morrison, *Transactions of the New York Academy of Sciences*.

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule . . . Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a thousand embarrassments; and what are more important, Herculean cheerfulness and courage."—Robert Louis Stevenson.

Report Inflammatory Eruption of Skin Following Sulfathiazole Treatment: What they believe to be the first case of exfoliative dermatitis (a scaly inflammatory skin eruption) to follow sulfathiazole treatment is cited by Mary Weinstein, M.D., and Albert H. Domm, M.D., Philadelphia, in *The Journal of the American Medical Association* for August 23.

The patient was being treated for pneumonia when suddenly after eight hours of sulfathiazole treatment a profuse scaling rash with blisters developed. The drug was discontinued but the eruption became progressively worse until death five days later.

"Certainly," the authors warn, "the potential danger of sulfathiazole dermatitis (skin inflammation) should be kept in mind with the first appearance of cutaneous lesions. Withdrawal of the drug and forcing of fluids at the earliest sign of cutaneous manifestations constitute the safest procedures, although, as demonstrated in this case, the outcome may still be fatal."

President's Page

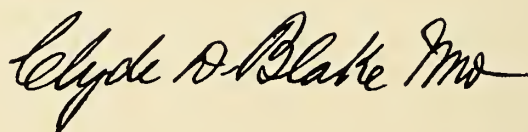
To the Members of The Kansas Medical Society:

First of all, as physicians of America and in the United States of America and the State of Kansas, let us pledge ourselves in the all out support of our Government in the crisis now evident. May we by self sacrifice render to our Government the services demanded of us in the preservation of national health throughout the Nation. Our duties as regards the safe guarding of health and well being of the armed forces, the Army and the Navy, must take precedence over any and all professional activities no matter how irksome such duties may seem.

Let us, as physicians of Kansas, offer our services unstintingly to our Government, as necessity may demand, to the end that voluntary service may amply supply medical personnel necessary in times of peace and war.

Let me express my appreciation for the response of the committee chairmen in attending the meeting at Wichita, on September 7th. The activities of the various committees under your leadership will result in many accomplishments during the year of the Society's activities.

Sincerely,

A handwritten signature in cursive script, reading "Clyde D. Blake M.D.", with a long, sweeping horizontal stroke at the end.

EDITORIAL

THE PHYSICIAN-SOLDIER

Laments are too often heard for men who are chosen for military duty. The necessity for building military forces is evident. It is obvious duty of men who are qualified to submit willingly and heartily to military training and service. This applies to physicians as well as to selectees in the draft. In order that the Army of the United States may have full and adequate medical service it becomes the duty of physicians in considerable numbers to accept commissions in the Medical Corps. The enlisted men and officers of the line are entitled to the best medical talent and facilities that can be provided.

It is not a simple task to raise and train a great army when the country is not at war. The conflict of ideas and purposes among the population and the resulting lack of unity of feeling precludes the nation-wide emotional response. The United States is not aroused to a national emergency calling for self denial and sacrifice. It is through cold analysis of world conditions that men should be led to see the dangers ahead and the necessity to prepare to met these dangers through the organization of national resources. Such organization means men and equipment, regiments and guns and all that goes with them, including a large number of doctors. As a special group doctors possess the intellectual qualifications to think through the cold analysis of the problem, unfettered by political influence or policy. As a part of the social organization doctors have a particularly important function to perform. Above all else they are doctors. Their duties are prescribed for them by society at large and by their own professional standards.

Historically the mission of the physician as a soldier is to keep as many men at as many guns as many days as is humanly possible. For these physicians whose duty does not take them into military service this mission should be paraphrased for the general practitioner in country or urban practice, for the industrial surgeon in a factory town, for any doctor anywhere. Those whose privilege and duty it is to serve with the armed forces will have a more colorful and a more valuable experience. Many of these men will meet and be associated with some of the best minds in medicine. For them it will be an experience in clinical medicine including every type of medical and surgical disease. Every facility for diagnosis and treatment will be provided. Military

service for the average doctor will be a re-education, a post graduate training of inestimable value to him throughout the remainder of his professional life. He will give up some of his freedom and adapt himself to military discipline. He will give up his "business" and his home temporarily. His income will be reduced. He will loose his identity as an individual and become a part of a great organization, but his mission will still be that of a doctor. Let it be remembered that in peace or in war the place of the physician in society is that of one whose singleness of purpose leads him to perform the duties that are required of him. As a free man he submits consciously, accepting his obligation and fulfilling it to the best of his ability.

IMPROVED RESULTS IN APPENDICITIS

A recent report of the Metropolitan Life Insurance Company shows that in 1940 the adjusted death rate in appendicitis was 8.9 per 100,000, which is the lowest in the history of the company. This represents a decrease of nearly 40.0 per cent from the high rate of 14.4 per 100,000 recorded in 1929. Hospital statistics and mortality reports sustain these insurance figures generally. It is evident that more prompt medical attention is being given to appendicitis than ten to fifteen years ago. During the late 1920's the medical profession became aware of the rising mortality. Some surgeons who were getting their cases early were surprised at the nation-wide statistics presented. General discussion and study of the problem resulted in directing attention to the reasons for delay in hospitalization and to education of the public. Considerable concentration upon the subject of appendicitis for ten or more years has produced the improvement which is now becoming quite evident. This is due in part to a more intelligent attitude on the part of the public, who have learned to call a physician more promptly and refrain from giving cathartics in the presence of abdominal pain. It is also due to improvement in diagnostic observation by physicians. However, there should be no resting upon an improved record. Vigilance and sustained effort will continue to lower the present death rate. The subject of appendicitis should be discussed at staff meetings frequently, with the presentation of clinical cases, so that general practitioners and surgeons may be alert. Early surgical consultation is a safeguard against late operation. Let it be remembered that it has taken over ten years to account for the present improvement and not be flattered.

MEDICAL SCHOOL

ENTEROCOCCUS ENDOCARDITIS DUE TO STREPTOCOCCUS FECALIS*

WITH A REPORT OF TWO CASES**

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Endocarditis figured in the original descriptions of "enterococci" although such cases are regarded as rare. Thiercelin was the first to use the term for these facultative parasites. In the English literature, leading contributions have been along the lines of classification.

Enterococcus may be considered as a common name for group D streptococci of Lancefield² according to Sherman³. This group includes *Streptococcus fecalis* of Andrewes and Horder⁴ and related cocci. This interpretation clarifies the ambiguity that had arisen from the loose use of the term as synonymous for *Streptococcus fecalis*. The work of Graham and Bartley⁵, and of Brown⁶ concurs with that of Sherman.

The first case of an enterococcus endocarditis is that reported by MacCallum and Hastings in 1899⁷ with the original description of *Micrococcus zymogenes* which is now recognized as *Streptococcus zymogenes*, a hemolytic enterococcus. The patient was ill three months and had been on the service of William Osler at Johns Hopkins Hospital.

The pathology of this first case typifies the picture found in later reports. These main findings are: (1) ulcerative endocarditis of the aortic and mitral valves; (2) septic infarcts; and (3) abscesses in the intestinal wall. The organisms were isolated from the blood stream before death and at autopsy from the heart's blood, valvular vegetations, gallbladder, splenic and renal infarctions, and other parts of the body.

Streptococcus fecalis was isolated from four of twenty-four cases of "malignant endocarditis" before and after death by Andrewes and Horder⁴ in 1906. These organisms comprised the first strains classified

as *Streptococcus fecalis*. These authors stated that this organism was closely related to *Streptococcus salivarius*, the one passing into the other "by insensible gradations." This organism is non-hemolytic, heat resistant, and ferments mannite when classified according to the biochemical tests of Grodon. Mannite fermentation was the only point of differentiation between this organism and the salivarius strain, but its unreliability when streptococci were tested at long intervals was pointed out by Major⁸ in studies on endocarditis lenta in 1912.

Enterococcus in endocarditis again appeared in the literature in 1912 when Hicks isolated the *Streptococcus zymogenes* strain from the blood stream of a patient with this disease according to Thomson and Thomson⁹. Three more of these cases were proved by blood culture by Crowe¹⁰ in 1923. The malignancy of the disease was explained by him on the basis of digestive power of this organism on the vegetations of the cardiac valves which would allow the characteristic emboli to be set free.

The habitat of the enterococcus is the intestinal tract, where it lives as a saprophyte. It may become pathogenic in the following locations:

(1) Ulcers of the intestinal tract, e.g. chronic form of ulcerative colitis or dysentery. Enterococci, according to Felsen¹¹, are usually recovered from the intestinal contents, intramural abscesses and catheterized urine of cases after the specific strain of dysentery bacillus has disappeared.

(2) Genito-urinary tract, e.g. pyelitis or cystitis. Four of twelve pathogenic strains of the original *Streptococcus fecalis* isolated by Andrewes and Horder⁴ were from the latter source.

(3) Postoperative peritonitis.

(4) Generalized sepsis, e.g. postabortal, endocarditis, and following otitis media. The latter type represented three of four instances of isolation of *Streptococcus fecalis* from the blood stream by Andrewes and Horder⁴. Of these otitis cases two were complicated by meningitis.

(5) Respiratory tract was cited by Clements¹².

A case of enterococcus endocarditis was reported by Clements¹² in 1937. This patient was a white male, fifty years of age, with no rheumatic history, whose onset was with an atypical pneumonia. Two weeks after onset there was hematuria, and enterococci were isolated from the blood stream. A typical clinical picture of endocarditis affecting the aortic and mitral valves ran its course terminating in cardiovascular collapse with pulmonary edema about three months after onset of symptoms.

The autopsy findings were consistent with the original report of MacCallum and Hastings⁷ and showed (1) ulcerative endocarditis of the mitral

*From the Clinical Laboratory of the University of Kansas Hospitals and the Department of Pathology of the University of Kansas School of Medicine.

**The two cases were on the Medical Service of the University of Kansas Hospitals, and for the use of them the authors wish to express their appreciation to Dr. Ralph H. Major.

and aortic valves with thickened aortic cusps, (2) infarcts of the liver, spleen and kidney, (3) healed ulcerations of the rectosigmoid. In addition to these findings there was gray hepatization of the entire right lung and lower lobe of the left with purulent exudate from the former yielding enterococci on culture.

Clements believes that the portal of entry into the general circulation can usually be found at autopsy, which in this case was considered to be the ulceration in the alimentary tract.

In 1938 Sherman¹³ reported that one of the fifty cultures of fecalis which he studied was from a fatal case of endocarditis and had been sent to him by Dr. E. G. D. Murray. The other strains were isolated from human feces, milk, ice cream, and cheese. All of these were found upon testing to belong to Lancefield group D. Sherman states: "It has been shown that all of the four now recognized species of the enterococcus group, as this group has been defined by us, belong to the Lancefield group D." This group is comprised of two non-hemolytic species, *Streptococcus fecalis* and *Streptococcus liquefaciens*, and two hemolytic species, *Streptococcus zymogenes* and *Streptococcus durans*.

Streptococcus fecalis was the causative agent in a case of bacterial endocarditis reported by Williams¹⁴ in 1939. This case has some very interesting and significant findings. The patient was a white female, age thirty, who had a history of rheumatic valvular disease. The onset of illness followed a spontaneous abortion at two months, soon after which she passed two feet of segmented flatworm. This was followed by acute polyarthritis which upon subsiding was succeeded by diarrhea and abdominal pain. The final illness was characterized by weakness, dyspnea, vague pains, anemia, fever, large spleen, hematuria, and clubbing of the fingers. Physical findings were those of a mitral stenosis, aortic insufficiency, and subacute bacterial endocarditis. *Streptococcus fecalis* was isolated from the blood stream.

Autopsy showed the characteristic picture of endocarditis due to this organism which was also isolated from the vegetations at this time. There was a mitral stenosis, acute vegetative endocarditis of the mitral and aortic valves, focal myocarditis, septic infarcts of the spleen and kidney. The large bowel showed scattered areas of congestion, and contained *Taenia saginata* although the head was not attached to the mucosa at autopsy. Panarteritis of the mesenteric artery with septic thrombosis was found without infarction of bowel. Peritonitis appeared to be traced to an attached area over a large soft necrotic infarct in the spleen although the capsule was intact.

REPORT OF TWO CASES

Case 1. H. H., a fifty-eight year old white male entered this hospital on February 25, 1939, complaining of pain in the abdomen, chills and fever. The onset was ten weeks before admission, at which time he had "flu" which consisted of malaise and general muscular pains. In about five days he had chills, and about two weeks later there was abdominal pain located in the left upper quadrant. The patient was in a poor mental state and gave a poor history. He had eaten almost nothing since the onset and was quite emaciated. He had a history of gonorrhea followed by a stricture. There was no hematuria, but there was burning and dribbling.

Physical examination revealed an enlarged heart with systolic and diastolic murmurs at the third intercostal space on the left. The abdomen showed some rigidity and tenderness in the epigastrium, and tenderness was also elicited in the back on the right side.

Laboratory examination revealed a hemoglobin ranging from sixty-nine per cent to fifty-seven per cent, R.B.C. ranging from 3,700,000 to 2,900,000 and W.B.C. 28,900 to 15,000. The blood Wassermann was four plus. The spinal fluid showed a four plus Wassermann, and a colloidal gold curve of 4444332210. The blood sedimentation rate was rapid, dropping thirty mm. in sixty minutes.

One blood culture was positive for *Streptococcus fecalis*.

Progress showed a gradual decline with drowsiness and fever ranging chiefly around 100-102 degrees during the twenty days of hospitalization before he expired.

Autopsy: The heart showed a vegetation on one aortic cusp which measures four mm. in greatest diameter. A luetic mesaortitis was found.

Examination of the abdomen revealed an abscess in the gastro-colic omentum. A fishbone measuring three cm. in length and two mm. in diameter was found embedded in the pancreas near the posterior wall of the abscess. A large thrombotic mass was attached to the wall of the portal vein near the abscess cavity and the mass became larger as the liver was approached. At the hilum of the liver the portal vein was almost occluded. An abscess was found in the liver just beyond this point.

Cultures yielded *Streptococcus fecalis* from the vegetations on the heart valves and both abscesses of the liver and peritoneal sac.

Case 2. (It has been referred to by the authors¹⁵ in a discussion of *Streptococcus fecalis* strains of group D (enterococci).) J. C., a thirty-four year old white male was admitted to this hospital on April 5, 1940, complaining of heart trouble, shortness of breath, chills and fever. The onset was sudden with a chill and general malaise following extraction of a tooth which was accomplished with great difficulty, and which had been done for a toothache. The patient had frequent chills followed by low grade fever for the next week although he continued to work for several days. He was then confined to bed for three weeks with this picture. Then he was taken to St. Joseph Hospital, Kansas City, Missouri, where a diagnosis of infectious endocarditis was made, and a non-hemolytic streptococcus was isolated from the blood stream. He developed jaundice three days before admission to this hospital. The patient developed shortness of breath along with palpitation and gas with bloating of the abdomen. There had been a loss of forty pounds in weight. History was negative in all respects referable to rheumatic heart disease.

Physical examination revealed an acutely ill, and poorly nourished male, who perspired profusely and was quite dyspneic. The heart was enlarged to the left. There was

a systolic and diastolic murmur at the mitral area, and a to and fro murmur at the aortic area, as well as at the left sternal border. The abdominal examination revealed the liver and spleen to be palpably enlarged two fingers breadth below the costal margin.

Laboratory examination revealed the hemoglobin ranging from eighty-one per cent to fifty-seven per cent, R.B.C. from 4,300,000 to 3,000,000, and the W.B.C. from 22,000 to 6,400. The sedimentation rate fell twenty-one and twenty-eight mm. in sixty minutes. Urinalysis showed no hematuria but there was up to 310 pus cells per cu. mm.

Blood cultures on eight different days yielded eight pure cultures of non-hemolytic streptococci, which proved to be *Streptococcus fecalis*. This organism belonged to Lancefield group D when precipitin tests were performed on the carbohydrate extracts of the organisms employing typing sera obtained from Dr. Lancefield*.

Progress of the patient was unfavorable on chemotherapy in this hospital, as it had been in St. Joseph Hospital on a similar regime in addition to heparin administration. He was dismissed on April 18, 1940, and it is understood that he died at home about one month later. No autopsy was permitted.

SUMMARY

1. These cases are presented as reports of enterococcus endocarditis due to *Streptococcus fecalis*.

2. The pathogenesis appears to be demonstrated in each instance. In Case 1 it is believed to have been as a result of the fishbone perforation of the intestine, and the subsequent abscess formation in the peritoneal cavity and liver. In Case 2 it followed tooth extraction and manipulation.

3. Although *Streptococcus fecalis*, a mannite fermenting organism, has been considered to be rare in the mouth in contrast to a viridans organism such as *Streptococcus salivarius*, milk and cheese as a source of this enterococcus should be kept in mind.

4. We feel that the prognosis in enterococcus endocarditis is especially grave in the light of in vitro findings that these organisms are not inhibited in blood by sulfathiazole in concentrations much higher than the therapeutic range¹⁵.

NOTE: This paper may be considered as a preliminary report to a more extensive study dealing with different strains of streptococci isolated from endocarditis cases in the clinical bacteriology laboratory of the University of Kansas Hospitals. This has been undertaken with reference to chemotherapy by sulfonamide compounds in vitro. Factors concerned with the modification of chemotherapeutic activity of these agents on endocarditis strains of streptococci are being studied in the Hixon Laboratory at this time.

*The authors wish to express appreciation to Dr. Rebecca Lancefield for the antisera which she furnished them.

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TUBERCULOSIS CONTROL

FINDING TUBERCULOSIS AMONG COLLEGE STUDENTS

The colleges and universities of the United States and Canada are becoming increasingly "unfair to tuberculosis!" They are showing that they recognize an obligation to safeguard and improve campus health and the present report of the Tuberculosis Committee relates action such as no previous report has recorded.

For the academic year of 1939-40, 248 colleges had some form of tuberculosis control, an increase of about fifty per cent over the preceding school year. Necessarily, where a movement is gaining new adherents annually, the character of individual programs varies greatly. There are still 629 colleges with no program but about thirty of these hope to initiate one this year. Although 402 schools neglected to return the questionnaire sent by the Committee, there were 193 additional replies this year. In spite of this, six states have failed to report a single collegiate tuberculosis program.

The duties of the Committee fall into three divisions: first, the presentation to interested schools of the most approved outline of workable institutional tuberculosis case finding; second, the active encouragement of interest in case finding; and third, the collection, analysis and publication of statistical data secured from colleges taking part in the national survey.

Since the statistical data collected by the Committee are submitted by many people and accumulated under widely differing conditions, some are open to criticism so the report figures are indicative of trends rather than mathematical pronouncements.

The procedure is to mail questionnaires early in May to cooperating schools and a follow-up is sent in October when necessary. Nothing is asked which would require the keeping of complex records. The

form requests the name and enrollment of the college, number of positive reactors to tuberculin, tuberculosis cases discovered and their disposition, and the number of students tuberculin tested and x-rayed elsewhere than on the campus. Similar data are requested on non-student tuberculosis. Returns are divided by sex. The reverse side contains questions as to procedure which, in general, can be answered by a check mark. The recommended technics are plainly underlined. A duplicate copy of the questionnaire is sent for the use of the health officer of the institution.

This year questionnaires were sent to twenty colleges and universities in Canada. There is no Canadian student health association and so frequent have been the requests for information that it was decided to circularize these colleges. Several fine programs are already under way in Canada.

More colleges have discovered this year that a relatively simple system suffices to keep track of tuberculin testing, negative and positive reactors, x-ray results, etc. It is essential that those conducting health work know, at any time, the exact status of their effort and the result.

The Committee agreed that tuberculin testing is a prime prerequisite to a tuberculosis case-finding plan and believes that only thus can all infected students be identified. The Committee recommends the annual re-testing of all negative reactors since the initial infection occurring in a young adult may produce an unpredictable clinical sequence of events. Where hazards of infection are heightened, as in nursing, medicine, dentistry, practice teaching, etc., more frequent testing is indicated.

The Committee recommends that only reliable tuberculin be used and that a positive reaction to the tuberculin test be succeeded by a good chest film. Where possible, the fluoroscope should be used as a supplement to the film.

In Table I data from 166 colleges are compiled because their figures seemed satisfactory in quality. The continued shrinkage in positive reactors seems to indicate a national decline in childhood infection.

TABLE I

Tuberculin Testing of American College Students

Year	Total No. Tested	Per Cent Positive
1932-33	14,318	35.0
1933-34	25,184	30.3
1934-35	26,861	29.4
1935-36	31,601	30.0
1936-37	56,224	27.3
1937-38	64,232	25.8
1938-39	82,774	25.5
1939-40*	123,389	25.4

*Reliable returns only.

The results of the survey in cases found are condensed into Table II.

TABLE II

Cases of Pulmonary Tuberculosis
Diagnosed Among College Students 1939-40

- A. Institutions with some tuberculosis control program
B. In institutions with no tuberculosis control program

	A.	B.
Clinically active cases diagnosed*	292	21
Apparently arrested cases diagnosed*	345	14
Withdrawals due to tuberculosis	273	25
Old cases back in school	338	23
Institutions reporting	248	227
Approximate total enrollment	490,000	200,000

Using only the active cases for comparison, it is seen that such cases were turned up with much greater frequency in Group A. It is fair to presume that these cases were found early, often preclinically, instead of late and with marked signs and symptoms, which proves again the importance of early diagnosis.

Educators are sensing the urgency that animates an enlightened citizenry intent on eliminating every preventable disease. The ultimate aim of the Committee is to report that in answer to their questionnaire, every American college has replied: "We have a modern tuberculosis control program, and tuberculosis will not catch this college or any of our students napping."—From Tuberculosis Abstracts, September, 1941; abstracted from the Tenth Annual Report of the Tuberculosis Committee, American Student Health Association, 1939-40 by Charles E. Lyght, M.D., Chairman, *Journal-Lancet*, April, 1941.

*Generally recognized criteria of activity were specified.

The significance of Vitamin A in treatment of night blindness has received much recent attention, but studies of the Vitamin D complex in relation to progressive myopia represent a new advance in prevention and alleviation of this ominous and baffling eye condition. An article on the subject in the *American Journal of Ophthalmology* states that myopia treated from the standpoint of rectifying vitamin deficiency shows encouraging response to ingestion of Vitamin D, leading the author, Dr. Arthur Alexander Knapp of New York, to hope that the cause of this defect is near solution. Conspicuous deficiencies of calcium have been related to myopic eye conditions and Dr. Knapp reports indications that the Vitamin D complex plays a part in the etiology of keratoconus. It is suggested that the vision of patients manifesting a diminishing hyperopia may also be improved by calcium- and Vitamin D-fortified diets.—Sight Saving Review.

NEWS NOTES

NEW SECRETARY

At a meeting held on September 10 in Topeka, the members of the Kansas State Board of Health voted unanimously to appoint Dr. Floyd C. Beelman of Topeka as acting secretary of the board of health during the absence of Dr. F. P. Helm, who will spend the next ten months in postgraduate work at Johns Hopkins School of Medicine in Baltimore, Maryland.

Dr. Beelman was graduated from the Ohio State University College of Medicine at Columbus, Ohio, in 1935, he served as school physician of Wichita for several years and later served as county physician of that county. During the past two years he has been the director of the Division of Tuberculosis of the Kansas State Board of Health.

HEART COURSE

The annual postgraduate course in heart disease sponsored by the Society committee on the study of that subject and the Kansas Heart Association will be held at the Broadview Hotel in Emporia on September 29 to October 2.

The speaker for the course will be Dr. Tinsley R. Harrison, Professor of Medicine of the Bowman-Gray School of Medicine, Wake Forest College of Winston-Salem, North Carolina.

The program will consist of instruction on various phases of heart disease conducted in the mornings, afternoons and evenings of the four days of the meeting.

The event is financed by the physicians who attend and the registration fee for this year is \$25.00 for the course. The available facilities will make it possible for approximately thirty physicians to be accepted. Dr. Philip Morgan of Emporia, who is in charge of the arrangements of the 1941-42 course, advises that several registrations are still open. Physicians who would be interested in attending are invited to correspond with Dr. Morgan.

COMMITTEE CONFERENCE

A meeting of the Society committee chairmen was held in Wichita on September 7.

The following suggested programs for the various Society committees to attempt to accomplish during 1941-42 were presented and approved:

COMMITTEE ON ALLIED GROUPS TO MEDICAL PRACTICE

Completion of arrangements through the Kansas State Board of Medical Registration and Examination to have a bulletin issued to Kansas physicians and hospitals describing the laws governing the practice of radiology and anesthesiology in this state.

Issuance of a questionnaire to the county medical societies requesting information concerning persons who are believed to be practicing healing illegally in this state and as to doctors of medicine who are believed to be practicing unscientifically and unethically. Assistance to the Kansas State Board of Medical Registration and Examination in having these persons apprehended.

The maintenance of close liaison relationships with the Kansas State Dental Association, the Kansas Veterinary Medical Association, the Kansas State Nurses Association, the Kansas Conference on Social Work, the Kansas Medical

Assistants Society, the Kansas Society of X-Ray Technicians, the Kansas State Funeral Directors Association, and similar allied organizations. Consideration of the possibility of arranging with some or all of these organizations to interchange exhibits, speakers, delegates, et cetera at annual meetings.

Assistance in other matters being studied by the committee.

COMMITTEE ON AUTOMOBILE ACCIDENTS AND FRACTURES

The provision of liaison assistance to the Kansas Safety Council, the Kansas Highway Commission, and the Kansas Highway Patrol in the medical aspects of the prevention of automobile accidents, and in the care of automobile accident victims.

Study of lien laws, arrangements with insurance companies, the Kansas financial responsibility law, and other means wherein physicians and hospitals can be assisted in caring for automobile accident victims. Issuance of a bulletin on this subject to the county medical societies.

Study of the physical examination requirements made in the drivers license laws of other states.

Study of tests to determine alcoholic intoxication. Preparation of a report on this subject for the Kansas Highway Patrol.

Investigation of possibilities for obtaining specially designated automobile licenses for Kansas doctors of medicine.

Preparation of a Kansas fracture program.

COMMITTEE ON AUXILIARY

That the Auxiliary councilors shall assist the organization chairman in the organization of new auxiliaries in unorganized counties, and in obtaining new auxiliary members.

That Hygeia be placed in the offices of all physicians throughout the state.

That Hygeia should be distributed among the secondary schools and effort should be made to complete arrangements for the \$600.00 allotment approved by the Kansas State Board of Health for this purpose.

Continued assistance through the Auxiliary in placing books on public health and medicine in schools and public libraries.

Assistance through the Auxiliary in presenting exhibits on medicine and public health at fairs, conventions, and similar gatherings.

Assistance through the Auxiliary in furthering the presentation of lay educational programs at women's clubs and similar organizations.

That the Auxiliary Public Relations program carry the theme of nutrition and health during the year in their various programs which they will present to the various lay groups and clubs.

Assistance to the Auxiliary in maintaining a close liaison relationship with the Kansas Womens Field Army. The completion of arrangements wherein the Auxiliary will be extended membership on the Executive Committee of the Kansas Womens Field Army.

That the Legislative Committee of the Auxiliary shall inform its membership of all impending matters of legislature that is vital to the welfare of public health.

COMMITTEE ON CONTROL OF CANCER

Completion of the survey on present and needed cancer therapy equipment in Kansas, and preparation of a bulletin on this subject for the county medical societies.

Decision as to whether a postgraduate course on cancer shall be presented during 1941-42, and if so, preparation of plans in that regard.

Continued assistance to the Kansas Womens Field Army. Provision of information and assistance on the following questions submitted by the Womens Field Army:

a. As to methods which can be used to provide more adequate financing for the W.F.A.

b. As to whether the members of the Kansas Medical Society should be asked to become sustaining members of the W.F.A.

c. As to whether the W.F.A. should sponsor a "cured cancer club."

Further revision and improvement of the Society lay and professional loan packets on cancer.

Decision as to whether the section on cancer in the Journal shall be continued, and if so preparation of plans in that regard.

Assistance in the provision of cancer exhibits at lay and professional meetings.

Consideration of the possibility of establishing a Division on Control of Cancer in the Kansas State Board of Health.

Continued assistance in the provision of state-wide lay educational programs on cancer.

Assistance to the Kansas State Board of Medical Registration and Examination in filing injunction actions against illegal cancer practitioners.

Preparation of a lay pamphlet on cancer for use by the Womens Field Army and other agencies.

Preparation of a desk card for physicians on the diagnosis of cancer.

COMMITTEE ON CHILD WELFARE

Assistance to the Kansas State Board of Health in the preparation of its child welfare programs. Discussion of the projects included in the 1941-42 Division of Child Welfare budget, and suggestions thereon.

Preparation of a more efficient and practical Kansas vaccination and immunization program.

Continued study of the Kansas quarantine problem.

Development of a more complete school health program, in conjunction with the Kansas State Department of Education and the Kansas State Teachers Association.

Assistance to the Kansas Committee on Nutrition and the Kansas Committee on School Lunches.

Study of tetanus toxoid immunization, and preparation of a bulletin on this subject for the county medical societies.

Continued study of child morbidity and mortality in Kansas, and of ways in which further reductions can be obtained.

Assistance in the presentation of child welfare exhibits at lay and professional meetings.

Assistance in the poliomyelitis research being conducted by Dr. J. A. Wheeler and the Kansas State College.

Study of milk control in Kansas.

Preparation of a lay pamphlet on nutrition, immunization, and other pediatric subjects for distribution through physicians.

Establishment of close liaison relations with the Kansas Parent-Teachers Association.

COMMITTEE ON CONSTITUTION AND RULES

Preparation and distribution of printed copies of the Society Constitution and By-Laws.

Consideration of any changes needed in the Constitution and By-Laws for presentation to the 1942 House of Delegates. Consideration of the possibility of adding a section wherein prominent scientists, who are not doctors of medicine, but who are interested or allied to medicine may be admitted as associated members.

COMMITTEE ON ENDOWMENT

Further conferences with the University of Kansas En-

dowment Association in the interest of obtaining endowment funds for medical research.

Investigation of other possibilities for obtaining endowment for medical research.

COMMITTEE ON CONSERVATION OF EYESIGHT

Continued assistance in the blind program of the Kansas State Board of Social Welfare.

Preparation of a report for the Kansas State Board of Social Welfare, showing the causes of blindness in Kansas and ways in which blindness can be reduced in this state in the future.

Conferences with the Kansas State Department of Education and the Kansas State Teachers Association as to possibilities for instituting a more extensive conservation of eyesight program in Kansas schools.

Consideration of the possibility of presenting a state-wide postgraduate program on eye or eye, ear, nose and throat.

Development of additional lay educational programs on conservation of eyesight. Consideration of the possibility of preparing a special program of this kind for Kansas industry.

Investigation of plans and sources through which eye glasses may be more easily furnished to indigent persons.

Continued supervision of the eye, ear, nose and throat section in the Journal.

COMMITTEE ON STUDY OF HEART DISEASE

Preparation of plans for the postgraduate course on heart disease to be held during October in Emporia.

Consideration of the possibility of presenting a state-wide postgraduate course on heart disease.

Assistance in presenting exhibits on heart disease at lay and professional meetings. Consideration of the possibility of presenting an exhibit, describing the Kansas program on this subject, at the 1942 American Medical Association meeting.

Preparation of a brochure on heart disease for Kansas physicians.

Consideration of the possibility of establishing a Division on Heart Disease in the Kansas State Board of Health.

Further assistance to the Kansas State Board of Health in arranging for the standardized reporting of heart disease morbidity and mortality.

Preparation of a lay pamphlet on heart disease for distribution by physicians.

COMMITTEE ON HISTORY

Preparation of the annual report of the committee.

Assistance in bringing up-to-date the file of pictures and biographies of past presidents of the Society.

Completion of arrangements wherein the Kansas State Historical Society will receive copies of all current medical history material.

Inspection of the medical history material assembled by the Writers Project of the Kansas Works Progress Administration.

COMMITTEE ON HOSPITAL SURVEY

Assistance in a liaison relation with the Kansas State Hospital Association.

Publication of the committee survey of Kansas hospitals to the county medical societies, in order to determine whether any corrections or additions should be made therein.

Study as to whether there are any areas in the state which are not adequately served by existing hospitals, and if so, preparation of recommendations in that regard. Consideration, also, as to whether the areas of the state in which national defense projects are being constructed have

sufficient hospital facilities to care for the population increases which will result therefrom.

Completion of a survey to determine the adequacy of present equipment and facilities in Kansas hospitals and preparation of recommendations concerning any needed equipment.

Study of hospital licensure laws.

Study of the needs and uses of plasma banks, and as to whether Kansas should engage in a more extensive program on this subject.

Assistance to the Kansas Hospital Association in the institution and operation of its group hospitalization program.

Study of possibilities for assisting hospitals in receiving reimbursement for the costs of indigent hospitalization.

COMMITTEE ON INDUSTRIAL MEDICINE

Cooperation with the American Medical Association Bureau of Industrial Medicine in supplying the needs of this state on this subject.

Assistance in a liaison relation with the Kansas Workmen's Compensation Commission.

COMMITTEE ON LOCATIONS

Preparation of a study including information and comments on the following subjects:

a. The ratio of physicians to population in each of the counties.

b. The comparative ratio of physicians to population in the state as compared with other states of similar size and circumstances.

c. The percentages of physicians in each county in the young, middle, and old age groups.

d. The number of cultists and other non-medical practitioners in each county.

e. The need, if any, for additional specialists in the state.

f. Additional data wherein the Kansas locations may be more accurately appraised.

Completion of arrangements wherein pharmaceutical and surgical salesmen will report available locations and the names of physicians seeking locations to this committee.

Consideration of the possibility of establishing part-time medical service through physicians in neighboring communities, where military duty and other matters occasion immediate or emergency needs.

Study as to whether any additional physicians will be needed in areas of the state in which national defense industries are being constructed.

Other assistance in filling Kansas location needs.

COMMITTEE ON MATERNAL WELFARE

Assistance to the Kansas State Board of Health in the preparation and operation of its maternal welfare program. Discussion of the projects included in the 1941-42 budget of the Division on Maternal Welfare, and suggestions thereon.

Consideration as to whether a postgraduate program on maternal welfare should be presented during the next year.

Continued study of Kansas maternal morbidity and mortality statistics, and development of further programs for their reduction. Re-issuance of the obstetrical suggestions adopted by the committee.

Development of a more extensive lay educational program on maternal welfare.

Preparation of a lay pamphlet on prenatal care for distribution by physicians.

Study of monthly payment plans for obstetrical patients, and if the plans are believed to be helpful and practical,

issuance of a bulletin to the county medical societies on this subject.

Assistance in obtaining needed incubators for Kansas hospitals. Consideration of the possibility of obtaining financial assistance therefor from civic clubs and similar organizations.

Assistance in the presentation of exhibits on maternal welfare at lay and professional meetings.

Preparation of a desk card for physicians on prenatal and obstetrical care.

Provision of assistance to the Kansas Obstetrical and Gynecological Society.

COMMITTEE ON MEDICAL ECONOMICS

Continued study of the indigent medical care problem, and further cooperation with the Kansas State Board of Social Welfare on that subject.

Assistance to the Kansas State Hospital Association in the institution and operation of its group hospitalization program.

Study of prepayment medical service plans.

Study of plans offered by insurance companies for provision of medical service.

Conferences with farm groups for discussion of farm medical problems.

Conferences with labor groups for discussion of labor medical problems.

Continued study of Kansas Farm Security Administration medical plans.

Issuance of a bulletin to the county medical societies stressing the need for each county society to have a medical economics committee, and for such committees to be active in the study of local economic problems.

Continued supervision of the Medical Economics Section in the Journal.

COMMITTEE ON MEDICAL PREPAREDNESS

Completion of the American Medical Association survey in regard to physicians who are available and not available for military duty.

Study of the Kansas Selective Service physical examination statistics, of the ratio of Kansas rejections by induction boards, and as to how the Kansas record compares with other states.

Study of the problem of Selective Service registrants rejected for physical reasons, and as to the need for treatment and rehabilitation programs in that regard.

Study of the "one examination" plan now being considered for selective service examinations, and as to how this would work in Kansas. Likewise, if county board examinations are to be continued, consideration of the possible advantages in having this work rotated among a larger number of members.

Study of the percentage of Kansas physicians serving in the military forces as compared with other states. Study of methods to be used for obtaining an additional number of physicians for the military forces in the event a quota must be filled or a larger number are otherwise needed from this state.

Consideration of possibilities for assisting Kansas physicians, serving in the military forces, in the handling of their practice and other problems while they are away, and in re-entering practice when they return.

Consideration as to whether Kansas should engage in defense studies, as is now being done in certain other states, on subjects such as: treatment of air-raid victims, organization of emergency service medical teams, wound therapy, et cetera.

Study of the question of filling location vacancies occasioned by military needs.

COMMITTEE ON MEDICAL SCHOOLS

Continued liaison assistance to the University of Kansas School of Medicine.

Continued study of the patient admittance problem at the University of Kansas Hospitals.

Study of the problems which the medical school will experience through selective service and national defense activities.

Assistance in regard to the teaching material problems at the medical school.

Study of ways in which the Kansas profession may more actively assist on the staff of the medical school.

COMMITTEE ON NECROLOGY

Preparation of the annual report of the committee. Arrangements with the program committee for the 1942 annual session to have a space reserved on the general assembly program, following the president's address, for presentation of the report.

Consideration as to whether this report should continue to be presented at general assembly meetings, or be presented to the House of Delegates. If deemed advisable for it to be presented to the House of Delegates, preparation of recommendations for the Society Committee on Constitution and Rules in order that the Society by-laws may be changed in that regard.

COMMITTEE ON PHARMACY

Assistance in a liaison relation with the Kansas State Pharmaceutical Association.

Joint action with the Kansas State Pharmaceutical Association in obtaining proper interpretations of the provisions of the new Federal drug law, and in publishing same to Kansas physicians and pharmacists.

Reorganization of the Kansas Council on Public Health. Discussion with representatives of the Kansas State Pharmaceutical Association, the Kansas State Dental Association, the Kansas State Hospital Association, the Kansas State Nurses Association, the Kansas Veterinary Medical Association, and with other organizations which should be asked to join, as to possibilities for holding a meeting during next year for obtaining a corporate charter, for election of officers, for organization of future work, and for arranging to hold annual meetings.

COMMITTEE ON PUBLIC HEALTH AND EDUCATION

Assistance in establishing a Division of Public Health Information in the Kansas State Board of Health, through which the following activities may be instituted or extended:

- a. The presentation of a greater number of public health exhibits at lay meetings.
- b. The establishment of an extensive movie library, through which lay educational and scientific movies may be made available for loan to numerous groups and agencies.
- c. The preparation and distribution of a greater number of pamphlets on public health subjects.
- d. The preparation of transcriptions and other facilities for wider use of public health radio programs.
- e. Extension of the present news release program.
- f. The more frequent use of "spot news" releases on epidemics, unusual public health conditions, new programs, timely and seasonal health information, et cetera.
- g. The preparation and distribution of talk outlines on public health topics.
- h. The preparation of reports on public health needs in Kansas for legislators, lay groups, et cetera.

- i. The preparation of loan packets of lay educational information.

The issuance of a bulletin campaign to the county medical societies urging that they develop, encourage, and actively engage in needed public health programs in their communities such as school programs, lay talks, milk control, immunization programs, venereal disease programs, et cetera.

Study of Kansas county health programs.

Assistance in a liaison capacity with the Kansas Committee on Adult Education.

Study of "birthday examination" programs. Study of other needs in connection with the provision of physical examinations.

COMMITTEE ON SCIENTIFIC WORK

Assistance to the Kansas State Board of Health in the publication of special bulletins to Kansas physicians, calling attention to threatened or existing epidemics, unusual increased in morbidity and mortality, public health conditions, et cetera.

Assistance in the provision and coordination of Kansas postgraduate programs. Development of a larger number of county, joint county, and district postgraduate courses. Consideration of the possibility of recommending a larger number of reasonable fee courses.

Assistance in the preparation of the 1942 annual session scientific program.

Approval or rejection of applications for commercial exhibit space at the annual session.

Study of the needs for additional scientific equipment and facilities in the state, and of the economic use of present equipment and facilities.

Publication of bulletins and articles on new developments in medicine and surgery.

Publication of bulletins on the following subjects:

- a. The preparation of a larger number of scientific articles, and the presentation of a larger number of scientific exhibits at national and other meetings by Kansas physicians.
- b. The assistance available through the library loan service of the American Medical Association.
- c. The importance of members attending as many inter-sectional and national postgraduate activities as they can each year.
- d. The need for members to cooperate with the Kansas State Board of Health in prompt and efficient reporting of morbidity and mortality.
- e. The need for all county medical societies to hold regular and frequent scientific meetings.

COMMITTEE ON STORMONT MEDICAL LIBRARY

Consideration as to whether any changes should be made in the present purchase list of Stormont Medical Library.

Discussion with the State Library Committee, concerning plans for obtaining more adequate and satisfactory housing for the Stormont Medical Library.

Consideration of the possibility of providing a more complete periodical section in the Stormont Medical Library.

COMMITTEE ON CONTROL OF TUBERCULOSIS

Assistance in a liaison capacity with the Kansas Tuberculosis and Health Association, the Division of Tuberculosis of the Kansas State Board of Health, and the Norton Sanatorium.

Assistance to the Tuberculosis Committee of the Kansas Legislative Research Council in its studies of tuberculosis in Southeast Kansas, and in the need the state has for a

larger number of beds to treat tuberculosis patients.

Continued study of the present statute governing the admittance of patients to Norton Sanatorium, and preparation of a report on this subject.

Assistance in the Kansas State Board of Health tuberculin testing program.

Further extension of Kansas pneumothorax facilities and of county medical society tuberculosis diagnostic clinics.

Presentation of a postgraduate course or other postgraduate activities on tuberculosis.

Study of the needs in regard to tuberculosis at the University of Kansas School of Medicine.

Study of the tuberculosis problem in connection with the Kansas Selective Service program.

COMMITTEE ON VENEREAL DISEASE

Assistance in the handling of the venereal disease problem at Kansas army cantonments and national defense projects.

Study of the venereal disease statistics and information available through the Kansas Selective Service program. Publication of a report on that subject in the Journal.

Study of the advantages and disadvantages of premarital and prenatal physical examination laws.

Study as to whether Kansas has an adequate amount of dark field diagnostic facilities, and if not preparation of a program on that subject.

Issuance of bulletins to the county medical societies on the following subjects:

a. The need for all venereal disease patients to be treated adequately and scientifically, and at a price they can afford to pay.

b. The need for all county medical societies to discuss the extent of the venereal disease problem in their communities at their meetings, and to present frequent scientific programs thereon.

c. The need for routine Wassermann to be used on all pregnant women.

d. The need for all physicians to cooperate in the efficient reporting of venereal disease to the Kansas State Board of Health.

Persons who attended were as follows: Dr. Clyde D. Blake of Hays; Dr. Henry N. Tihen of Wichita; Dr. A. W. Fegly of Wichita; Dr. A. R. Hatcher of Wellington; Dr. F. L. Loveland of Topeka; Dr. B. I. Krehbiel of Topeka; Dr. Earl L. Mills of Wichita; Dr. A. C. Armitage of Hutchinson; Dr. Omer M. Raines of Topeka; Dr. C. Omer West of Kansas City; Dr. George Gsell of Wichita; Dr. H. M. Glover of Newton; Dr. Fred J. McEwen of Wichita; Dr. H. E. Snyder of Winfield; Dr. L. F. Barney of Kansas City; Dr. E. C. Duncan of Fredonia; Dr. Charles Rumbold of Wichita; Dr. George E. Milbank of Wichita; Dr. John Porter of Concordia; Dr. J. F. Gsell of Wichita; Dr. C. H. Warfield of Wichita; Dr. F. E. Dillenbeck of El Dorado; Mr. Jack Austin of Wichita, and Mr. Clarence Munns of Topeka.

OBSTETRICAL PROGRAM

The Kansas Obstetrical and Gynecological Society will hold a meeting in conjunction with the Golden-Belt Medical Society at Salina on October 2.

The speaker for the meeting will be Dr. John L. McKelvey, Professor of Obstetrics and Gynecology of the University of Minnesota School of Medicine, Minneapolis.

Dr. McKelvey will speak at an afternoon session commencing at 3:00 p.m. on "Recent Advances in Chemotherapy in Obstetrics" and at an evening meeting on "Some Interesting Complications on Pregnancy and De-

livery."

As above stated the Golden-Belt Medical Society is serving as hosts for the meeting and the program will be presented by the Kansas Obstetrical and Gynecological Society.

CLINICAL SOCIETY MEETINGS

The following clinical society meetings are to be held in the near future; the Kansas City Southwest Clinical Society in Kansas City, Missouri, on October 6-9; the Oklahoma City Clinical Society in Oklahoma City, Oklahoma, on October 27-30; and the Inter-State Postgraduate Medical Association of North America in Minneapolis, Minnesota, on October 13-17.

Descriptions of the meetings furnished by the above organizations are as follows:

"For the nineteenth consecutive year, the Kansas City Southwest Clinical Society will present its Annual Fall Clinical Conference in Kansas City, Missouri, October 6, 7, 8, 9, 1941.

Fifteen distinguished guests from various cities of the United States will present phases of medical advancement with which they have been identified from research and clinical viewpoints. Clinicians from Greater Kansas City who have achieved enthusiastic approbation of their colleagues at home, and many who enjoy more than local reputation, will participate in rounding out the program for the Fall Conference.

Scientific exhibits worthy of study are being prepared by members who have the knack of reaching into your brain cells through pictorial methods and alluring statistics. Technical exhibits upon new remedies, tried and true products, and mechanical devices of modern medicine will be displayed in greater numbers this year.

The Clinical Conference idea, pioneered in Kansas City almost twenty years ago, is now established in many cities throughout the country. The basic idea for clinical conferences is the continuing education of the physician, general practitioner or specialist, who is caring for the American public.

The 1941 Fall Conference program is ideal for any physician who wishes to listen and acquire new ideas, restore forgotten points and polish up on useful information. Plan now to come to the Nineteenth Annual Fall Clinical Conference. If you have not received the Kansas City Medical Journal, with the tentative program of the Conference, one will be sent to you upon request."

Guest speakers are as follows: Dr. Carl E. Badgley of Ann Arbor, Michigan; Dr. William Dock of New York City; Dr. John W. Harris of Madison, Wisconsin; Dr. Verne C. Hunt of Los Angeles, California; Dr. Philip C. Jeans of Iowa City, Iowa; Dr. Sara M. Jordon of Boston, Massachusetts; Dr. Samuel J. Kopetzky of New York City; Dr. E. Perry McCullagh of Cleveland, Ohio; Dr. Henry O. Mertz of Indianapolis, Indiana; Dr. John T. Murphy of Toledo, Ohio; Dr. Frederick W. Rankin of Lexington, Kentucky; Dr. G. Canby Robinson of Baltimore, Maryland; Dr. Ernest Sach of St. Louis, Missouri; Dr. Roy W. Scott of Cleveland, Ohio; Dr. Henry P. Wagener of Rochester, Minnesota.

"New frontiers in surgery and medicine will be discussed by seventeen nationally known medical leaders for the benefit of physicians and surgeons of Oklahoma and surround-

As an Adjunct in the Treatment of ALCOHOLISM

ONE of the newest and most interesting uses for which Benzedrine Sulfate has been accepted by the Council on Pharmacy and Chemistry of the A. M. A. is as an adjunct in the treatment of chronic alcoholism and also in alcoholic psychoses, although best results are reported in states of intoxication in which no psychosis is demonstrable. The articles listed below represent the most comprehensive work which has been done to date in this field.

Reifenstein, E. C. Jr. and Davidoff, E.: The Treatment of Alcoholic Psychoses with Benzedrine Sulfate—J. A. M. A., 110:1811, 1938.

Reifenstein, E. C. Jr. and Davidoff, E.: The Use of Amphetamine (Benzedrine) Sulfate in Alcoholism With and Without Psychosis—N. Y. State Med. J., 40:247, 1940.

Bloomberg, W.: Treatment of Chronic Alcoholism with Amphetamine (Benzedrine) Sulfate—New Eng. J. of Med., 220:129, 1939.¹

¹*Since this report, Bloomberg has enlarged his series to 60 cases which he reported on Dec. 28, 1940, at the annual meeting of the American Association for the Advancement of Science in Philadelphia. His results in this larger series were substantially the same as those in his original report.*

ADMINISTRATION

Initial dosage should be small (2.5



to 5 mg.) and should be increased progressively until the desired effect is obtained.

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ing states at the eleventh annual conference program of the Oklahoma City Clinical Society on October 27, 28, 29, and 30, 1941. An attendance of 1,000 is expected for the four-day educational program.

From a modest beginning in 1930, this clinic inaugurated by the profession in the state's capital city, has grown with the backing of physicians throughout Oklahoma until it is now rated as one of the important annual medical programs of the nation. Indications are that every county in Oklahoma will be represented in the attendance with sizeable delegates coming from Southwestern Kansas, Western Arkansas, Northern Texas, New Mexico, Colorado, Missouri, and Louisiana.

Dr. Fred W. Rankin, President-Elect of the American Medical Association, will head a list of national medical notables on the program which includes Dr. Walter C. Alvarez, Rochester; Dr. A. Bruce Gill, Philadelphia; Dr. L. Emmett Holt, Jr., Baltimore; Dr. Verne C. Hunt, Los Angeles; Dr. Howard T. Karsner, Cleveland; Dr. Francis E. LeJeune, New Orleans; Dr. Perrin H. Long, Baltimore; Dr. John H. Musser, New Orleans; Dr. Alton Ochsner, New Orleans; Dr. Earl D. Osborne, Buffalo; Dr. E. D. Plass, Iowa City; Dr. Wendell G. Scott, St. Louis; Dr. Albert O. Singleton, Galveston; Dr. Fred J. Taussig, St. Louis; Dr. Gilbert J. Thomas, Minneapolis; and Dr. Henry P. Wagener, Rochester.

The annual Clinic dinner and dance given by the Oklahoma City Chamber of Commerce, complimentary to visiting physicians and honoring the President-Elect of the American Medical Association, will be held October 28. Principal conference sessions will be held at Hotel Biltmore daily from 9:00 a.m. to 5:00 p.m., announces Dr. Basil A. Hayes, President of the sponsoring Oklahoma City Clinical Society."

"This years International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the public auditorium, Minneapolis, Minnesota, October 13, 14, 15, 16, and 17. The high standing of the medical profession of Minneapolis, combined with the unusual clinical facilities of its great hospitals and excellent hotel accommodations, make this city an ideal place in which to hold the Assembly. The Hennepin County Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly.

The officers of the Inter-State Postgraduate Medical Association, those of the Hennepin County Medical Society and the Minnesota State Medical Association, extend a very cordial invitation to all members of the profession in good

standing to attend the Assembly. The members of the profession are urged to bring their ladies with them as a very excellent program is being arranged for their benefit by the Ladies' Committee. A full program of scientific and clinical sessions will take place each day and evening of the Assembly, starting at 8:00 o'clock in the morning.

In cooperation with the Hennepin County Medical Society, the Minnesota State Medical Association and the Minneapolis Civic and Commerce Association, a most excellent opportunity for an intensive week of postgraduate medical instruction is offered by in the neighborhood of eighty-five distinguished teachers and clinicians from different parts of the United States and Canada who are honoring the Assembly by contributing to the program. The speakers and subjects have been carefully selected by the program committee.

Pre-assembly and post-assembly clinics will be conducted, free of charge, in the Minneapolis hospitals on the Saturdays previous to, and following the Assembly, for visiting members of the profession.

Excellent scientific and commercial exhibits of great interest to the medical profession will be an important part of the Assembly. These exhibits will be open to members of the medical profession in good standing without paying the registration fee. The registration fee for the scientific and clinical sessions will be \$5.00.

Members of the profession who can possibly arrange to attend the Assembly cannot afford to miss it.

With a great deal of pride and satisfaction, we call your attention to the list of distinguished teachers and clinicians who are to take part on the program and whose names appear on page 404."

STATE OPHTHALMOLOGIST

Dr. John A. Billingsley of Kansas City recently forwarded his resignation as state ophthalmologist to the Kansas State Board of Social Welfare. Dr. Billingsley's resignation was in accordance with the plan observed for that office of rotating the position among Kansas ophthalmologists and of each state ophthalmologist serving only for an eighteen months period.

Dr. H. L. Kirkpatrick of Topeka, who will serve as state ophthalmologist during the next term, assumed the duties of that office on September 1.

NUTRITIONAL CONFERENCE

Dr. Russell M. Wilder of the Mayo Clinic of Rochester, Minnesota, Chairman of the National Research Council

The Neurological Hospital provides a complete diagnostic service for psychiatric and neurological patients, and utilizes modern methods of therapy such as insulin and curare-electric shock. Treatment programs are based upon total patient therapy from the standpoint of internal medicine, surgery and the other specialties, as well as the psychiatric and neurological symptomatology.

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Kansas City Southwest Clinical Society

Where.... Municipal Auditorium, Kansas City, Missouri

When.... October 6, 7, 8, 9, 1941

Why.....5 Scientific Assemblies by 15 Guest Speakers.

6 Lecture Sessions, Medical, Surgical and Allied Specialties.

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will be the guest speaker at a meeting of the Kansas Conference on Nutrition which will be held in Topeka on October 17-18.

The meeting will be held at the Topeka Municipal Auditorium and will include talks and papers presented on the subject of nutrition by physicians and other persons.

RE-REGISTRATION

The attention of all members is directed to the fact that under the Kansas Medical Practice Act all medical licenses must be re-registered each year in advance of October 1.

Members who have not as yet forwarded their annual re-registration fee should do so before the above date in order to avoid complications in having their licenses renewed and a penalty charge of \$5.00.

Since the statute covering this matter makes no provision for exemptions of any kind, the Kansas State Board of Medical Registration and Examination is unable to authorize a waiver of this requirement for members in the military forces. Physicians serving in this capacity must therefore re-register their licenses in the usual manner until an amendment for this purpose can be submitted to the Legislature.

A.M.A. DIRECTORY

About September 1, an information card was sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information secured is to be used in compiling the Seventeenth Edition of the American Medical Directory.

The directory is prepared at regular intervals in the

Biographical Department of the American Medical Association. The last previous edition appeared in 1940. This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States; it has been especially valuable in the medical preparedness program. In it, as in no other published directory, are dependable data concerning physicians, hospitals, medical organizations and activities. The directory provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested.

Before filling out the information card, read the instructions carefully. Physicians are especially urged to state whether or not they are on extended active duty for the medical reserve corps of the United States Army and Navy. Fill out the card and return it promptly whether or not a change has occurred in any points on which information is requested. If a change of address occurs before March 1, 1942, report it at once. Should you fail to receive a card before the first of October, write at once to the headquarters office stating that fact and a duplicate card will be mailed.

HEALTH EXHIBITS

The Kansas State Board of Health presented exhibits at the two state fairs, held at Topeka and Hutchinson as well as ten county fairs throughout the state. Many thousands have viewed the various health exhibits shown in the past few years.

Exhibits were displayed on the following subjects:

RADIUM RENTAL

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Evaporated milk..... 4 ozs.
Water, boiled.....12 ozs.
Karo..... 1 tbs.
2 ozs. every 3 hrs. for 8 feedings

Lactic Acid milk (dried) 5 tbs.
Water, boiled.....16 ozs.
Karo.....1½ tbs.
2 ozs. every 3 hrs. for 8 feedings

CONCENTRATED MIXTURES

Breast milk.....12 ozs.
Evaporated milk..... 4 ozs.
Karo..... 1 tbs.
2 ozs. every 3 hrs. for 8 feedings

Lactic Acid milk (2%)...16 ozs.
Karo..... 2 tbs.
2 ozs. every 3 hrs. for 8 feedings

FEEDING PROGRESS

Days of Age	Drams at Each Feeding	Ounces of Feeding per 24 Hrs.
1	1	1
2	2	2
3	4	4
4	6	6
5	8	8
6	10	10
7	12	12

(8 drams = 1 ounce)

"MOST of the common milk mixtures have been used at various times with some degree of success—evaporated, acid and dried milks, and butter-flour mixtures. Those high in protein and carbohydrate and low in fat are the most suitable in concentrated formulas properly adapted to the limited digestive capacity of the premature. While lactic-acid milk with addition of 7 to 10 per cent by volume of Karo syrup yields twenty-five to thirty calories per ounce, evaporated milk with 5 to 10 per cent added Karo syrup is equally effective.

Processed or acid milks are advantageous because of the fine curds produced, the premature being particularly susceptible to curd indigestion. Nonfermentable carbohydrate in quantities similar to those used in normal feeding of infants may be added to any of these milks. The formula may be concentrated by decreasing the water, or adding powdered protein milk in place of extra amounts of sugar."

KUGELMASS: "Newer Nutrition in Pediatric Practice."

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infant and maternal health; control of communicable diseases such as tuberculosis, venereal disease and smallpox; protection of milk, water, food and drugs; rural sanitation; birth registration; accident prevention; dental health; and the control of cancer. The exhibits displayed this year will have the added attraction of color, motion and special lighting.

PSYCHIATRIC EXAMINATIONS

The September, 1941, Bulletin of the Menninger Clinic of Topeka is devoted to a symposium of articles on psychiatric examinations of selective service registrants.

The following subjects are included in the study: Objectives of the Selective Service Psychiatric Classification; The Psychiatrist in Relation to the Examining Boards; Abbreviated Neuropsychiatric Examination for use in Selective Service Examinations; Detecting the Feeble-Minded Registrant; Recognizing and Renaming "Psychopathic Personalities"; Malingering; Recognizing the Psychoneurotic Registrant; Detecting Schizoid and Pre-Schizophrenic Personalities; Detection of the More Common Neurological Conditions; Psychiatric Problems of the Armed Forces in Training and in Combat; Neuropsychiatric Casualties and Compensation; The Rejected Registrant in the Community; and Civilian Moral in Time of War and Preparation for War.

COUNTY SOCIETIES

The Labette County Medical Society sponsored an exhibit on "Medical Nostrums" at the Labette County Fair held in Parsons on September 1-4. The exhibit was obtained from the American Medical Association.

The Lyon County Medical Society held a meeting in Emporia on September 2. Dr. Hugh Hamilton of Kansas City, Missouri, spoke on "Obstetrics as a Medical Specialty."

The Sedgwick County Medical Society will hold its Fifteenth Annual Golf and Trap Tournament in Wichita on September 19. The golf tournament will be held at Crestview Country Club and the skeet, trap, pistol and rifle tournaments will be held at the Wichita Gun Club. A stag banquet will be held following the tournaments.

The Shawnee County Medical Society is considering the adoption of a new plan for the provision of indigent medical care in that county. A committee of the society, headed by Dr. M. B. Miller of Topeka, is holding meetings with the Board of Social Welfare and the County Welfare Director of Shawnee County in an effort to complete arrangements for a free choice method of indigent medical assistance. A county physician plan is presently used.

The Wyandotte County Medical Society met in Kansas City on September 2. Dr. Fred Angle of Kansas City spoke on "Problem of Long Continued Low-grade Fever." Dr. Paul M. Krall and Dr. Lee Leger of Kansas City discussed Dr. Angle's paper. Mr. C. E. Rein of Chicago, Illinois, chief of the research department on oxygen therapy of the Linde Air Products Company, also spoke at the meeting. Mr. Rein discussed the "Newer Means and Methods of Oxygen Therapy." Speakers for the September 16 meeting of the organization were: Dr. M. A. Walker and Dr. O. W. Davidson of Kansas City. Dr. Walker spoke on "Gas" and Dr. Davidson discussed "Interpretation of Urinalysis."



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October 27, 28, 29, 30, 1941

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 DR. A. BRUCE GILL, Orthopaedic Surgery, Philadelphia; Professor of Orthopaedic Surgery, Univ. of Penn.
 DR. L. EMMETT HOLT, JR., Pediatrics, Baltimore; Associate Professor of Pediatrics, Johns Hopkins Medical School.
 DR. VERNE C. HUNT, Surgery, Los Angeles; Clinical Professor of Surgery, Univ. of Southern California School of Medicine.
 DR. HOWARD T. KARSNER, Pathology, Cleveland; Professor of Pathology and Director of Institute of Pathology, Western Reserve University.
 DR. FRANCIS E. LEJEUNE, Otolaryngology, New Orleans; Professor of Otolaryngology and Head of Department of Otolaryngology, Tulane University Medical School.
 DR. PERRIN H. LONG, Internal Medicine, Baltimore; Professor of Preventive Medicine, Johns Hopkins Univ. Medical School.
 DR. JOHN H. MUSSER, Internal Medicine, New Orleans; Professor of Medicine, Tulane U. Medical School.
 DR. ALTON OCHSNER, General Surgery, New Orleans; Professor of Surgery and Head of Dept. of Surgery, Tulane University Medical School.

DR. EARL D. OSBORNE, Dermatology, Buffalo; Professor of Dermatology and Syphilology; Univ. of Buffalo School of Medicine.
 DR. E. D. PLASS, Obstetrics, Iowa City; Professor and Head of Department of Obstetrics and Gynecology, Univ. of Iowa Medical School.
 DR. FRED W. RANKIN, President-Elect, American Medical Association; Lexington; Clinical Professor of Surgery, University of Louisville Medical School.
 DR. WENDELL G. SCOTT, Radiology, St. Louis, Assistant Professor of Clinical Radiology, Washington Univ. School of Medicine.
 DR. ALBERT O. SINGLETON, Surgery, Galveston; Professor of Surgery, University of Texas Medical School.
 DR. FRED J. TAUSSIG, Gynecology, St. Louis; Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine.
 DR. GILBERT J. THOMAS, Urology, Minneapolis; Associate Clinical Professor of Urology, Medical and Graduate Schools, University of Minnesota.
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MEMBERS

The following members will appear on the program of the meeting of the Kansas City Southwest Clinical Society to be held in Kansas City, Missouri, on October 6-9: Dr. William H. Algie, Dr. J. A. Billingsley, Dr. O. W. Davidson, Dr. C. A. Gripkey, Dr. Harold V. Holter, Dr. Ralph H. Major, Dr. Thomas G. Orr, Dr. Don Carlos Peete, Dr. Mervin J. Rumold, all of Kansas City.

Dr. Leslie Brethour, the son of Dr. George Brethour of Dwight, has located in Junction City where he will practice with Dr. W. A. Smiley and Dr. W. A. Carr.

The article "Cobra Venom Analgesia in Surgery" by Dr. Paul E. Craig of Coffeyville, which was published in the July issue of the Journal, was abstracted in the August issue of Southern Medicine and Surgery and in the September issue of the Ohio Medical Journal.

Dr. Lawrence Filkin, formerly of Bonner Springs, has located in Junction City where he will be associated with Dr. A. E. O'Donnell and Dr. F. W. O'Donnell.

The article "Results of Metrazol Treatment" by Dr. W. W. Corwin and Mr. Albert C. Vorh of Topeka, which was

published in the February issue of the Journal, was abstracted in the August issue of Digest of Treatment.

Dr. Harry J. Davis of Topeka has gone to Chicago where he will engage in postgraduate work in surgery at the Cook County Hospital.

Dr. W. R. Palmer of Kansas City has been named Wyandotte County Coroner to succeed the late Dr. L. E. Growney.

Staff members of the Hertzler Clinic entertained on August 16, in honor of the Twenty-fifth Anniversary of the services of Dr. A. E. Hertzler and Dr. V. E. Chesky at the Halstead hospital, with a picnic supper. Dr. L. E. Peckenschneider of Halstead was toastmaster.

The August issue of the South Carolina Medical Society Journal contained a discussion of the article on "Thymic Death" by Dr. C. Alexander Hellwig of Wichita, which was published in the June issue of the Journal.

The article "Sudden Heart Death" by Dr. Philip W. Morgan of Emporia, which was published in the July issue of the Journal, was abstracted in the August issue of Southern Medicine and Surgery.

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Inter-State Postgraduate Medical Association of North America

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John Alexander, Ann Arbor, Mich.	John R. Fraser, Montreal, Canada.	John H. Musser, New Orleans, La.
Walter C. Alvarez, Rochester, Minn.	Henry J. Gerstenberger, Cleveland, Ohio.	Horace Newhart, Minneapolis, Minn.
W. Wayne Babcock, Philadelphia, Pa.	Harry S. Gradle, Chicago, Ill.	Emil Nowak, Baltimore, Md.
Lewellys F. Barker, Baltimore, Md.	Evarts A. Graham, St. Louis, Mo.	Frank R. Ober, Boston, Mass.
Claude S. Beck, Cleveland, Ohio.	Roscoe R. Graham, Toronto, Canada.	Paul A. O'Leary, Rochester, Minn.
E. T. Bell, Minneapolis, Minn.	Howard K. Gray, Rochester, Minn.	Eric Oldberg, Chicago, Ill.
Herrman L. Blumgart, Boston, Mass.	Robert G. Green, Minneapolis, Minn.	Oliver S. Ormsby, Chicago, Ill.
Peter T. Bohan, Kansas City, Mo.	Russell L. Haden, Cleveland, Ohio.	Ralph Pemberton, Philadelphia, Pa.
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Richard B. Cattell, Boston, Mass.	Elliott P. Juslin, Boston, Mass.	Erwin R. Schmidt, Madison, Wis.
Russell L. Cecil, New York, N. Y.	Louis J. Karnosh, Cleveland, Ohio.	Elmer L. Sevringhaus, Madison, Wis.
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Walter E. Dandy, Baltimore, Md.	William E. Lower, Cleveland, Ohio.	Waltman Walters, Rochester, Minn.
Robert S. Dinsmore, Cleveland, Ohio.	Charles W. Mayo, Rochester, Minn.	Owen H. Wangenstein, Minneapolis, Minn.
Claude F. Dixon, Rochester, Minn.	John I. McKelvey, Minneapolis, Minn.	Soma Weiss, Boston, Mass.
Daniel C. Elkin, Atlanta, Ga.	John C. McKinley, Minneapolis, Minn.	Henry M. Winans, Dallas, Texas.
John F. Erdmann, New York, N. Y.	Irvine McQuarrie, Minneapolis, Minn.	Wallace M. Yater, Washington, D. C.
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A program will be mailed to every member of the medical profession in good standing in the United States and Canada on or about September first.

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Feb. 1935. Vol. XLV, No. 2, 149-154*

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Dr. J. W. Spearing of Columbus spoke on tuberculosis before a meeting of the Cherokee County Teachers Institute on August 29 in Columbus.

DEATH NOTICES

Dr. Eyelyn Leon Adkins, 68 years of age, died on August 5 at his home in Lerado. Dr. Adkins was born at Burrton on July 3, 1873. He was graduated from the Keokuk Medical College of Physicians and Surgeons, in Keokuck, Iowa, in 1908, and practiced in the communities of Penalosa, Langdon and Lerado. He was an honorary member of the Reno County Medical Society.

Dr. Lawrence E. Growney, 46 years of age, died on August 9 of pneumonia, at his home in Kansas City. He was graduated from the Creighton University School of Medicine of Omaha, Nebraska, in 1923. At the time of his death he was serving his third term as coroner of Wyandotte county. He was also a Lieutenant Commander in the United States Naval Reserve and was a member of the Wyandotte County Medical Society.

Dr. Alfred Hezekiah Rogers, 78 years of age, died on August 14 at his home in Hepler. Dr. Rogers was born in Springfield, Missouri, on October 14, 1862. He was graduated from the Medico-Churgical College of Kansas City in 1899. He was an honorary member of the Crawford County Medical Society.

ANNOUNCEMENTS

The Omaha Mid-West Clinical Society will meet in Omaha, Nebraska, on October 27-31, 1941.

The American Public Health Association will hold its Eighth Institute on Public Health Education in Atlantic City, New Jersey, on October 12-14, 1941.

The Forty-Sixth Annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held in Chicago, Illinois, on October 19-23, 1941.

The Kansas City Southwest Clinical Society will hold its Nineteenth Annual Clinic in Kansas City, Missouri, on October 6-9, 1941.

KANSAS MEDICAL ASSISTANTS

A meeting of the Council of the Kansas Medical Assistants Society was held at the Hotel Leon in Hutchinson on Sunday, August 31, 1941.

The following were present: Mrs. Vera Mathews, Kansas City, President; Mrs. Florence Linton, Topeka, President-Elect; Mrs. Mildred McClure, Kansas City, Secretary; Miss Marceline Dinwiddie, Hutchinson, Treasurer. Councilors: Mrs. Marjorie Euler, Topeka; Miss Bessie Parker, Emporia; Mrs. Dolly Harrington, Arkansas City; Miss Marie Schwartz, Great Bend; and Miss Margaret O'Rourke, Dodge City.

Charters were issued to the Barton, Cowley, Ford and Reno County Medical Assistants Societies.

Mrs. Dolly Harrington was appointed editor of news for the organization. Each local society is requested to forward items regarding its meetings, speakers, and all pertinent information to Mrs. Harrington not later than the first of each month for inclusion in the Journal news items.

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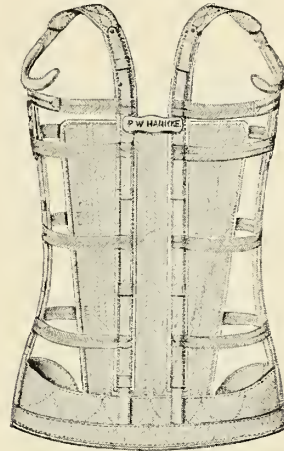
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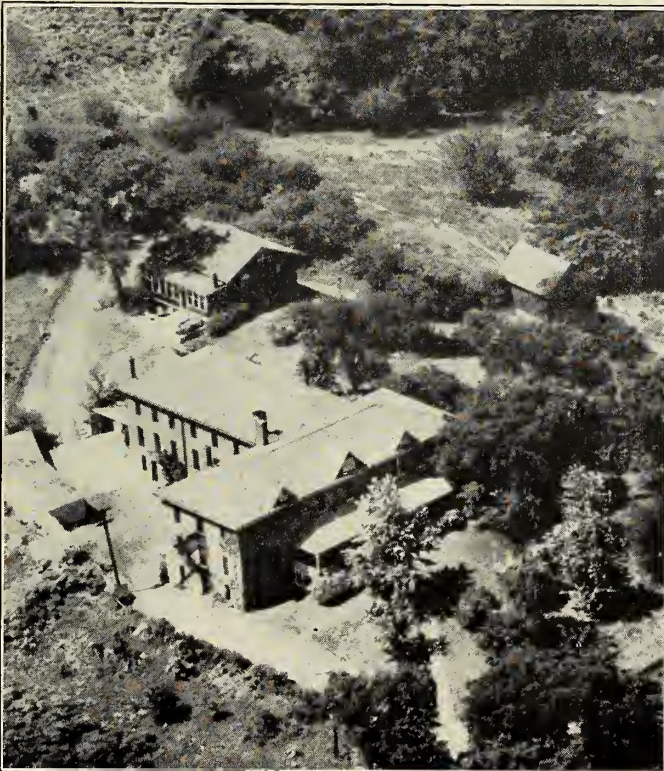
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AUXILIARY

PRESIDENT'S MESSAGE

Since my message to you in the August Journal of The Kansas Medical Society our first Bulletin for the year has been received. We do so hope that many of the Auxiliary members will subscribe for this quarterly magazine. All program material from the national Auxiliary will be presented only through the Bulletin and it will keep the membership in close touch with everything that a well-informed doctor's wife should know. We truly realize that the informed member is the one who is interested and active; our National President writes us "We should make a big effort to interest every doctor's wife in our organization not merely because increased membership means greater income but for the larger reason that every doctor's wife is needed in the work of health defense. We are facing critical times for which we need strength and unity."

The councilors have a great responsibility in the matter of organizing new auxiliaries. They should be in continuous contact with Mrs. Blasdel, our Organization Chairman. She necessarily will depend greatly on their help and co-operation for they are more familiar with the needs of their respective communities.

Let our goal for this year be more auxiliaries and larger and better informed membership.

Your President is looking forward to seeing all of the members of the state board in Wakeeney on September 23. Again let us extend to you our best wishes for a most successful Auxiliary year.


Sincerely,

Mrs. W. Y. Herrick.

SUGGESTIONS FOR STATE MANAGERS

The Woman's Auxiliary has grown until it has a membership of over 27,000. During these critical times when American medicine is confronted with developments which threaten its established principles it is extremely important that the Woman's Auxiliary conduct its affairs in such manner as to bring no reflection on the ideals of the parent body. To this end the members of our organization as well as the officers and chairmen who manage its affairs should be well informed concerning all plans and policies. They should also keep abreast of the times regarding those questions which are of interest to the medical profession.

The Bulletin of the Woman's Auxiliary is the official organ of our organization just as is the Journal of the American Medical Association for that organization. From now on official programs of standing committees will be printed in the Bulletin instead of in leaflets as formerly. This plan will eliminate much printing and postage expense. The programs will reach state and county officers at the same time, making it easier for state officers to plan the work with the officers of county auxiliaries earlier in



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the summer. All officers will have just one pamphlet for reference instead of several which will also mean greater coordination of effort and less overlapping in planning program activities.

Besides the programs, each issue of the Bulletin will contain information relative to home defense measures, nutritional education or Pan American unity. The Committee on Press and Publicity promises interesting and valuable material for each issue.

The following instructions may be found helpful in creating interest in the Bulletin:

1. Ask the county president to appoint a chairman of Bulletin.

2. Have a table at the annual state meeting where subscriptions may be taken. (Presidents-elect should promote this idea.)

3. Request county chairmen to give a brief review of the post convention issue of the Bulletin at the first Auxiliary meeting in the fall.

4. Plan for county chairmen a simple but adequate system of keeping records so that an exact report of new and renewed subscriptions may be sent to the national chairman when desired.

Your earnest cooperation in the matter of increased circulation of the Bulletin will be appreciated.

NOTICE

Extra copies of the post convention issue of the Bulletin of the Woman's Auxiliary are available. You may begin your subscription with this issue if you desire. It is an interesting and valuable number, containing four of the

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GYNECOLOGY—Two Weeks Intensive Course starting October 20th. Twenty Hour Personal Course in Vaginal Approach to Pelvic Surgery starting November 3rd. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Clinical and Special Courses starting every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Five Weeks Course in Refraction Methods starting October 13th. Informal Course every week.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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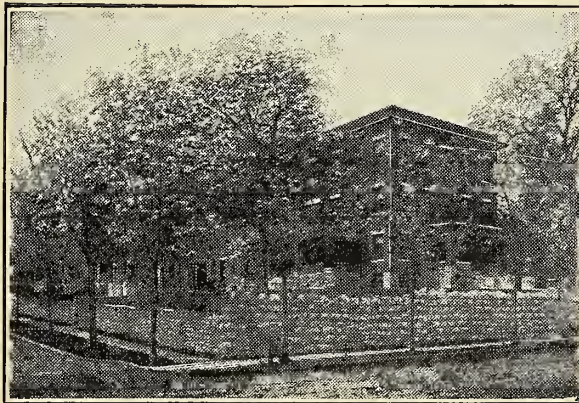
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major programs of the national organization which have to do with plans for home defense.

It is the plan of the national board to use the official publication to present all important material to the members of the Woman's Auxiliary. All issues of the Bulletin will contain, therefore, important programs and articles presenting information necessary for the efficient promotion of our Auxiliary projects.

Subscribers are entitled to four issues of the Bulletin for one dollar. Please indicate the issue with which you wish your subscription to start.—Mrs. L. B. Spake, Bulletin Chairman, 2000 Oakland Avenue, Kansas City, Kansas.

AUXILIARY NOTES

Dr. Roy W. Fouts, Vice Speaker of the House of Delegates of the American Medical Association, has this comment: "We challenge you—you are engaged in a noble work, imbued with the ideals and ethics of organized medicine."

Dr. Frank H. Lahey declares: "I have always felt that the Woman's Auxiliary of the American Medical Association was an excellent thing. The sacrifices which are associated with being the wife of a doctor go to develop qualities of character that are extremely desirable."

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THE OFFICE TREATMENT OF ANO-RECTAL DISEASES AND ITS LIMITATIONS*

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It is obvious that, in the discussion of this subject, considerably more time would be necessitated than the period allowed, therefore, a few of the diseases mostly encountered will be discussed.

The average patient consults his physician either because of pain, discomfort, or because of some change in the normal state of his well-being, or of some noticeable alteration of his physiologic function.

Ano-rectal diseases, which are characterized by pain or discomfort, are mostly located in the anus, anal canal, and lower rectum. Those which are characterized by some change in function, such as increase or decrease of the normal number of bowel movements, or in the appearance of the stool, as well as most conditions causing a discharge of blood, pus, or mucus, unaccompanied by pain, are located in the upper half of the viscus.

Excepting trauma, pain in this region is most commonly caused by such diseased conditions as, fissure, ulcer, excoriation, abscess, external and internal hemorrhoids, particularly if strangulated. Cryptitis, papillitis, and proctitis, may also cause considerable suffering. Proctitis, many cases of internal hemorrhoids, polyposis, and carcinoma, may all present symptoms of rectal dysfunction, and while devoid of pain, are accompanied by some discharge.

In the diagnosis of diseases of the ano-rectal region, it is most important to not only have an educated examining finger, but also to be able to make a simple internal examination of the organ, and to have a good knowledge of the normal, as well as the abnormal appearance of the ano-rectal cavity. Different physicians employ different positions and different types of armanentarium for the examination of patients with ano-rectal diseases. The method pur-

sued in personal practice, therefore, will be the one presented.

EXAMINATION

After a complete history has been taken, the patient is prepared for examination. Except when an investigation is indicated, as to the location of the obstruction in cases of constipation or obstipation, a preliminary cleansing soda enema, several hours before the examination, is desirable.

After the usual routine palpation and bimanual examination of the abdomen and pelvic organs, the patient is placed in the left lateral position, the right knee is well drawn up and the left leg is straight. The anal aperture and the surrounding skin surfaces are then minutely inspected for any deviation from the normal appearance of these parts. Circumanal excoriations may be either the cause of, or the result of, scratching to relieve itching. Skin eruptions are of importance. The presence of parasites, nits, elevations, depressions, papules, and pustules, are carefully noted. This part of the examination is termed external inspection.

With the patient still in this position digital examination is next in order. The examining hand is usually protected with a thin rubber glove, or the fingers with thin cots. A water-soluble lubricant is preferable to petrolatum or other greasy substances. Glycerine is not used because of its tendency to excite peristalsis. An analgesic ointment is inserted in the anal canal with a cotton swab and allowed to remain five minutes. The little finger is used in all cases for the preliminary examination.

With the palmar surface of the finger towards the coccyx, the well lubricated "expectantly supple" finger is pressed against the anus and the patient asked to bear down. Using the little finger causes the least amount of discomfort in making digital examination. If, on account of extreme spasm, sphincteric resistance is encountered, it is better to relax the sphincter by infiltration with a few c.c.'s of one per cent novocaine or one-half per cent metycaine solution in both postero-lateral quadrants. If, however, the insertion of the little finger does not produce much discomfort, the index finger is next inserted. Not only the condition of the anal canal and lower

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rectum is noted, but information is obtained about all of the other organs contiguous or impinging on the rectum.

Digital examination is amplified by bimanual palpation while the index finger of one hand is inserted as far as possible into the anal canal. The condition of the coccyx and sacrum is ascertained with the patient in the lithotomy position. The condition of the perineum, vagina, and pelvic organs is determined bimanually.

The patient is then turned again in the left lateral position for internal anal inspection. This is accomplished by the use of the anoscope, proctoscope, and sigmoidoscope. These are cylindrical instruments varying in length from two to twelve inches and of varying calibers.

The anoscopes approximate the sizes of the little finger, the index finger, and the thumb. The latter sizes is used only for office operations. The smaller size is the one employed most frequently, particularly in people who have complained of irritation, tenderness, and soreness. This is passed in the same way as the finger is inserted.

Any deviation from the normal appearance of the mucous membrane of the lower rectum and the transitional tissue lining the anal canal is carefully noted. The long slit-like appearance of fissure, the oval or rounded ulcer, the elongated pinkish-white hypertrophied papilla and the angry red-looking diseased crypt will be very evident. Internal hemorrhoids will be either bluish purple or varying shades of red. Polyps will be distinguished from papillae by the pedicles by which they are attached.

After observing all that can be seen through the anoscope, the patient is next placed in the knee-shoulder position, which is much more comfortable than the knee-chest position. His face is turned away from the instrument table for psychic reasons. The Proctoscope, well lubricated, is placed against the anus and gently inserted, while the patient is asked to strain.

As soon as the sphincters are passed, the obturator should be withdrawn, and the proctoscope inserted under visual guidance as far as possible. The condition of the mucous membrane of the rectum and the recto-sigmoid is then noted. The appearance and position of the rectal valves are observed, particularly with reference to fibrosis and to the presence of ulceration. In dysenteric and other diarrhoeas, the appearance of the ulcers will be often a guide to diagnosis.

With this instrument, smears and cultures from the mucous membrane can be made. While, in many patients, the sigmoidoscope can also be passed in this position, there are some who resist its passage. This

is usually due to extra-intestinal pathology, or to a short meso-sigmoid causing extreme angulation at the recto-sigmoid juncture.

For sigmoidoscopy in these cases, the inverted position is much more satisfactory. A tilting examining table, especially made for this purpose, is desirable, but an ordinary examining table can be used. The patient is so placed that, while he rests on his shoulders, the body is in a perpendicular position with the hips at right angles. The sigmoidoscope is passed in this position in the same manner as the proctoscope is used in the knee-shoulder position. The same precaution about removing the obturator should be emphasized in patients with ulcerative conditions. If an instrument is pushed into the bowel blindly, perforation of the bowel wall might occur. Several cases of accidents of this kind are on record.

In addition to the information obtained by proctoscopy, unsuspected benign or malignant tumors may be brought into view. In fact, quite frequently silent polyps or malignancies will be discovered through routine sigmoidoscopy. Fecal stasis in the sigmoid will be diagnosed by this method of examination.

In addition to the methods so far described in the examination of the proctologic patients, a very important adjunct is the employment of roentgenology. Fluoroscopic examination of the patient during the administration and after expulsion of an opaque enema is extremely informative. Manipulation of such patients will often disclose pathology which would escape notice on a flat film. Patients, who have given a previous history of abdominal surgery, disturbed confinements, or abdominal injuries or disease, will often show evidence of adhesions when observed during fluoroscopic examination. The differential diagnosis of colonic dysfunction from true colitis can be materially assisted with this type of examination. The presence of neoplasms above the area explored instrumentally from below can often be disclosed and particularly the presence of polyps after a double contrast enema.

The utilization of roentgenologic diagnosis is of the greatest value in the early discovery and treatment of malignancy, particularly of the movable colon. However, it must be emphasized that before the opaque enema is administered, complete instrumental exploration of the parts should be accomplished. It is quite possible for a patient to have a carcinoma of considerable size, particularly in the sigmoid colon and rectum, which may entirely escape detection by roentgenologic diagnosis alone.

HEMORRHOIDS

The most common affection of the rectum is internal hemorrhoids. External hemorrhoids accompany internal hemorrhoids in many cases and occa-

sionally occur alone. External hemorrhoids can not be treated without surgery. In many cases, this can be accomplished in office practice. The acute thrombotic variety, also known as a perianal hematoma, is caused by the sudden rupture of a perianal vein. Incision under infiltration anesthesia and evacuation of the clot usually suffices. In some cases, an elliptical flap is made to facilitate excision.

All incisions in this region should be made radial to the anus. Any bleeding, which may occur, can be controlled with the ligature or the coagulating current. External cutaneous hemorrhoids must be excised radially. There is no type of sclerosing treatment applicable to external hemorrhoids. Each hemorrhoid in turn is anesthetized by infiltration with one per cent novocaine or one-half per cent metycaine solution and excised radially. Hemorrhage is controlled as above, and a compression bandage applied.

It is much better to excise than to attempt to destroy cutaneous hemorrhoids by electro-therapy of any kind. Incised wounds heal more quickly with less destruction of tissue and no deformity. Internal hemorrhoids are distinguished from external hemorrhoids only by their location at the ano-rectal juncture, and by their covering. Internal hemorrhoids are always covered with mucous membrane, while external hemorrhoids are always covered with skin.

Internal hemorrhoids are recognized by anoscopic examination. It is not possible to detect internal hemorrhoids unless they are of large size and fibrous, by digital examination alone; they must be seen. In over ninety per cent of the patients, internal hemorrhoids are constant in location. One is usually found on the left side, while two are located on the right. These are known as the left lateral, right anterior and right posterior hemorrhoids. Secondary hemorrhoids may be found between these three main ones.

While the indicated procedure for the permanent removal of internal hemorrhoids is hemorrhoidectomy under some form of regional anesthesia, this can not be performed on some patients for various reasons. Some of these reasons are economic, some are psychic, and some are dictated by the enfeebled condition of the patient.

Among the procedures used to treat internal hemorrhoids non-surgically, various types of electro-therapy seem to have a vogue at present. Fibro-therapy, however, is more effective and more easily accomplished in the practice of most physicians. An objection to the use of electro-therapy in any form is the fact that, while the varicose veins may be shrunken or even destroyed, the valuable mucous membrane, which covers these veins, is also sacrificed and stenosis frequently results.

The employment of fibrosing agents by injection definitely improves the condition of the patient by causing the hemorrhoids to atrophy without the sacrifice of their normal mucous membrane covering. Various sclerosing agents are employed. In personal practice, two solutions are used. In all patients, where there is no contraindication, a five to ten per cent solution of quinine urea hydrochloride is employed. In these few patients who are sensitized to quinine urea, a five to ten per cent solution of phenol in sweet almond oil is used.

The technic is simple. The patient is placed on the table as for operation as far as emptying the bowel and skin sterilization is concerned, however, no patient is shaved. A medium sized anoscope is usually employed and the hemorrhoid, which has caused the most discomfort, or hemorrhage, is injected first. A glass syringe provided with a two and one-half inch twenty to twenty-four gauge needle is used. A point in the center of the hemorrhoid just above its juncture with normal mucosa is punctured. From .5 to 2.0 c.c. of quinine urea solution is slowly injected. The hemorrhoid is not blanched, but definitely distended.

In most patients but one of the three groups is injected, the others being done at three-day intervals, then a week is allowed to elapse before a second cycle of injections is given. Most patients do not require more than three cycles, or nine injections.

At the time of the injection, it is important to aspirate before injecting in order to be sure that a vein has not been entered, and the injection must be given between the veins, and never directly into the mucous membrane. If one is careful about this, slough will not occur. Where phenol-in-oil is employed, the same technic is followed, but the injection can be given directly under the mucous membrane. A pledget of cotton, impregnated with anesthetic ointment, is inserted after each injection and the patient is told to allow it to remain for several hours.

While these injection treatments are practically painless, some patients do complain of some discomfort afterwards. This does not occur when an anesthetic ointment is employed. Mineral oil or one of its emulsions or a water-carrying bulk lubricant is administered at night to all hemorrhoidal patients in order to insure a well lubricated stool. Hemorrhage is usually controlled after the first series of injections, and the patient immediately starts to improve.

All patients receiving injection treatments are informed that this treatment is temporary, the relief will last from six months to as many years. They are instructed that if symptoms recur that they are to return for a few more injections. They are informed,

however, that the injection treatment is no substitute for hemorrhoidectomy, and merely postpones for a while an operation for the permanent relief of their trouble.

This treatment serves to carry over during a period of stress, patients who later will have a hemorrhoidectomy. When unemployment has been so prevalent, this method serves to prevent absence from one's duties and to help "keep the home fire burning." It is also helpful in patients who are anemic or physically run-down, and who would not make suitable surgical risks. A few patients have such an inordinate dread of hospitalization, that they demand some form of treatment which will not necessitate such confinement. For this class of patients as well, fibroization is suitable.

PROLAPSE

Simple anal eversion, first or second degree rectal prolapse may be treated by the same technic as described above for internal hemorrhoids. One of the sclerosing agents is injected under the mucous membrane at several equidistant points at different planes to produce adhesion of the prolapsus to the muscularis. This treatment is followed in many cases by a surprising degree of success. Preparation and after-care is the same as for hemorrhoidectomy, and these patients are warned not to strain at stool. In addition to the administration of lubricants, soda bicarbonate enemas are recommended to assist defecation until the prolapsus is firmly fixed.

ANAL FISSURE AND ULCER

Anal fissure is distinguished from anal ulcer by the fact that the fissure is a tear produced by traumatization of the wall of the anal canal. An anal ulcer is the state of chronicity which supervenes on the fissure or upon an erosion caused by stercoral injury. A fissure is a furrow produced by a tearing down of a papilla or crypt. It may also be produced by the splitting of the anal wall from sudden strain produced by the passage of a constipated stool, coughing, sneezing, or sudden muscular effort. After a few days, the fissure becomes an elongated ulcer. Usually, the outer extremity is partially surrounded by an edematous fold of skin called a "sentinel pile."

Fissures are usually excruciatingly painful, and produce sharp lancinating pain and sphincter spasm or defecation. Relief is accomplished by the removal of the sentinel pile, when present, and the induction of spincteric rest. It is not necessary to dilate or divulse the sphincter to produce this rest.

After sterilization, the skin just outside of the fissure, is infiltrated with a one per cent novocaine or one-half per cent metycaine solution, followed by a one-half per cent quinine urea or diothane solution for postoperative anesthesia. After waiting five min-

utes, the sentinel pile is excised and the fissure or ulcer incised down to the sphincter, the fibers of this muscle being cut down nearly one-half way. The outer portion of the incision should be deeper than the inner.

Hemostasis is produced as mentioned above and a small strip of rubber tissue covered with anesthetic ointment inserted into the wound and a dressing applied. Should a hypertrophied papilla be present at or near either extremity of the wound, this should be excised by the scissors or snare. In some cases after preparing the patients as for operation, infiltration under the fissure or ulcer of five per cent quinine urea, or one of the oil anesthetics will put the part at rest sufficiently so that operation may not be necessary.

CRYPTITIS AND PAPILLITIS

When anoscopic examination discloses that the patient's symptoms are due to hypertrophied anal papillae or diseased crypts, cryptectomy and papillectomy can be performed in most cases in office practice. Infiltration anesthesia is employed. It is not advisable when patients are not hospitalized or confined to bed to remove more than two or three crypts or papillae at one treatment. Usually, hypertrophic papillitis and cryptitis occur together, so papillectomy and cryptectomy can be performed at the same time.

When anesthesia has been completed, the largest papilla is removed either by the cold or electric snare as close to the base as possible. An incision is then carried from the base through the infected crypt to the outside skin. The scissors and forceps can be used to excise the papilla in place of the snare.

Two or three papillae and crypts located in the same quadrant can be removed at the same time. Four or five days should elapse before another group opposite to the ones previously excised, can be removed in like manner. Even in severe cases, where many papillae and crypts are involved, three or four treatments should be sufficient to complete the removal of all of them.

In all cases, the postoperative injection of quinine urea or diothane solution is advised. In some individuals prolonged anesthesia is obtained by the injection of oily anesthetic solutions. While anesthesia is more prolonged, sometimes temporary sphincteric incontinence is produced to the annoyance to both the physician and the patient. Oily solutions are usually composed of five per cent benzocain, eucupin or diothane in oil. The aftercare is the same as above.

PRURITUS ANI

This condition can sometimes be relieved by office treatment. Without going into many causes for this annoying and persistent itching, suffice it to say that when a keratosis or proliferative

dermatitis is present, topical applications alone will not give the patient more than fleeting relief. Most cases of pruritus ani are caused by disease of the crypts, papillae, or mucous membrane of the rectum. Some are due to the presence of parasites and fungi, others are caused by contacts with chemical, allergic, or mechanical irritants.

The removal of the etiologic factor is, of course, the first consideration. Relief of itching must be instituted even while the exciting cause is being treated. Most patients aggravate the original irritation by scratching and rubbing, when the itching is severe. Traumatization and secondary infections are thus produced. Some patients achieve relief when the use of soap and water and toilet paper is prohibited and the parts cleansed by oil with absorbent cotton substituted as a detergent.

Some patients are greatly relieved by the application of tincture of benzoin compound to the excoriated surfaces twice daily. Others respond to tar preparations. Others require, in addition to these applications, the subcutaneous injection of anesthetic agents of lasting effect. The eucupin or diothane oil solutions are of value here as is also the two per cent quinine urea solution.

The pruritic area is divided into four quadrants, one-half inch outside of the itching area is the point selected for injection under each quadrant. When quinine urea solution is used, from five to ten c.c. are injected subcutaneously in one of the quadrants. Sufficient solution should be used to slightly distend the parts. The injection must be carried up to the anal opening, care being used not to perforate the skin. It is not necessary nor advisable to inject a solution under the mucous membrane of the rectum because pruritus is a skin symptom.

Every third day another quadrant is injected. After each injection, the benzoin or tar is applied. To secure rapid evaporation, an electric fan or air spray is employed. In some cases of pruritus ani, it is necessary to excise hypertrophied skin folds or skin tags according to the technic outlined above.

It is to be remembered, that in the treatment of pruritus ani, many factors of a general character must be taken into consideration, and what is presented here is merely that form of treatment which can be successfully used to relieve the itching in office practice.

ABSCESS AND FISTULA

The diagnosis of a peri-anal abscess is not difficult. A history of pain increasing in severity and throbbing in character with the presence of a tender or aching area in the region of the anal aperture should suggest an abscess. Palpation will detect induration and swelling with or without fluctuation.

An abscess should be drained as soon as the diagnosis is made. To open an abscess under infiltration anesthesia, one must be careful to avoid puncturing and injecting the solution into the abscess. After the part is prepared, a point at least one-half inch outside of the abscess area is selected for the puncture. One per cent novocaine or one-half metycaine solution is employed. The infiltration is started under the normal skin and then the needle carefully advanced over the surface of the abscess. In this way, a minimum amount of discomfort is produced by the initial distention produced by the infiltration.

The abscess is then incised from without inward in a direction radial to the anus. Not infrequently, examination of the cavity will disclose an internal opening into the anal canal or rectum. Injection of heated bismuth paste or of a colored solution will indicate the location of the internal opening.

As a general rule, no attempt should be made at this time to treat this condition until the abscess has been allowed to contract, when the remaining fistula is treated at a subsequent time. Some abscesses of the rectal cavity, if they can be definitely outlined, can be incised in office practice.

As a general rule, it is far better not to attempt the opening of any, but the simplest type of abscess, unless the patient is hospitalized. None but the simplest fistulas should be treated in office practice.

If one can not pass a soft silver probe from one opening to another in fistulas which are mostly external, the injection of bismuth paste and stereoscopic radiographs should be employed to assist in the diagnosis. This will prevent attempted fistulectomy which might prove too complicated for anything but hospitalization and operative treatment.

If the fistula is small and can be easily outlined, infiltration can be employed the same as for the excision of an abscess. Remember, that the injection should be started well away from the external opening and the fistulous tract undermined with anesthetic solution. The flexible probe, with its ends twisted together, is used as a tractor.

The fistula is opened or excised threaded on the probe. The overhanging skin edges are trimmed back and the lining of the cavity cauterized either with the electric cautery or with phenol. If the electric cautery is employed, the tract must be touched quickly and great care exercised not to touch any portion of the body outside of the anesthetized area. Rubber tissue drainage should be employed and the cavity never tightly packed with gauze.

In the subsequent care of all patients treated in office practice, it is important that the bowel movements be so regulated that neither hard constipated stools nor the irritating fluid stools from hyperca-

tharsis are passed. Patients are advised that a well-formed stool, properly lubricated, acts as nature's dilator, and in the normal direction from within outward.

The frequent and continued use of hot compresses or hot sitz baths are of distinct value in promoting pleasant and rapid convalescence. Only in pruritus ani is this contraindicated. Here, the patient is advised to cleanse the parts with oils rather than soap and water.

As was stated in the opening paragraph, it is obviously impossible to discuss the office treatment of many diseases of this region in a half hour. It has been my endeavor to mention only such methods and treatments as can be carried on by the average general practitioner of medicine with a minimum of special instruments or paraphernalia. Expensive electrical or other complicated apparatus is not necessary for the office treatment of diseases most commonly encountered. Patients suffering from conditions which do not seem to fit in with the methods therein described, had better be referred to the proctologist who is properly trained to treat all of the diseases affecting the ano-rectal region. More than fifty per cent of patients affected with the diseases mentioned in the preceding paragraphs can be materially assisted, if not entirely relieved by the simple methods of treatment described.

The use of roentgen therapy, diathermy, and other methods of electro-cautery therapy, have purposely not been advocated. While of great value in some cases because the majority of physicians in general practice can not be expected to be equipped with apparatus whose cost and upkeep does not warrant the expense involved.

Moreover, there are a number of diseased conditions of the colon which are treated in office practice by many proctologists which are not mentioned because the limitations of this paper, in time and scope, will not permit their discussion.

If what has been covered, will assist some general practitioners in the treatment of some of the common diseases of the anus and rectum in office practice, the time spent will not be in vain.

Ninety-two American doctors have qualified for service in Great Britain—A total of 230 applications, up to September 4, had been received by the American Red Cross from physicians wishing to enroll with the Royal Army Medical Corps in response to a British Red Cross request for American physicians. The Journal of the American Medical Association for September 13 reports.

"Of these," The Journal says, "138 had been found unqualified because of age, lack of citizenship or other similar reasons. Ninety-two have been qualified and forty-two have been given passports to Great Britain; the remaining fifty are in process."

DIAGNOSIS AND TREATMENT OF EARLY CONGESTIVE HEART FAILURE*

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The early recognition of symptoms and signs leading to heart failure is essential in limiting the present high immediate mortality and morbidity of heart disease. The prognosis of severe congestive failure is not good and is worse with recurrence. If the advanced case is first seen with rapid fibrillation, thyrotoxicosis, constrictive pericarditis, or arterio-venous fistula it is evident that through a combination of medical and surgical treatment the outlook may be definitely superior. With newer advances in therapy, it is probable that a useful existence may be salvaged for many more of the other cases. Too often as a result of cumulative damage to the myocardium and inability to respond to treatment the course is progressively downward. In practically all of these cases a careful evaluation of the history given by the patient and his relatives will reveal that there has been a breakdown with a definite succession of symptoms going on oftentimes for years. Recognition of these earlier symptoms, or better still, the closer realization that this chain of events may occur to a large group of susceptible individuals, gives us the clue to extending their comfort and usefulness over a much longer period of time.

The full blown picture of congestive failure is not a difficult diagnostic problem when the well-known syndrome of organic heart disease, dyspnea and fluid accumulation is present. The problem must not be confused with peripheral circulatory failure. The patient, lying flat on his back, cold and clammy, with a rapid thready pulse, and a fallen blood pressure and showing an absence of fluid accumulation, is not suffering from congestive heart failure but is in shock. Differentiation is required because digitalis-like drugs would here be not only useless, but harmful. Acute heart failure from damage to the coronary circulation is also to be differentiated except that about one-third of the cases surviving myocardial infarction show signs of congestive failure during convalescence or resumption of activity and who would come under the present discussion.

The pathogenesis of congestive failure must be constantly kept in mind. A definite diagnosis of organic heart disease is a prerequisite. The common etiological agents are acute and chronic rheumatic

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carditis, hypertension, coronary arteriosclerosis, syphilitic cardiovascular disease, active or burned-out hyperthyroidism, congenital heart anomalies and chronic pulmonary disease. Signs of failure may be latent for many years until ushered in by various precipitating factors. Inasmuch as these factors are avoidable or amenable to treatment it is well to advise the patient with organic heart disease or hypertension of the nature of these factors, so that failure may be forestalled. They must seek to avoid all infections. Most cardiacs get into serious trouble with the cough and fever associated with infections of the upper respiratory tract. With even a simple cold, they should go to bed and call their physician. It is imperative to remain in bed as long as fever persists. Coughing is a tremendous exertion and should be adequately controlled by suitable opiates. Over-exertion is to be avoided always. They must learn to stop with fatigue or palpitation, particularly with dyspnea. The question of marriage should be considered. With limited cardiac reserve, pregnancy is apt to precipitate an acute congestive failure. The added duty of rearing children or earning a livelihood for them may entail overworking. Obesity is a controllable factor, which is to be avoided because of the decidedly increased circulatory demand of adipose tissue. It has been estimated that there are five miles of capillaries necessary to nourish one pound of fat, thus the peripheral resistance against an already precarious pump may be ruinous. The elevated diaphragm in obesity may decrease the pulmonary vital capacity. It is not possible to over-stress the necessity of watching such overweight in the potential cardiac. Anemias from whatever cause, should be controlled with suitable therapy. In the patient with an over-worked heart and an anemia, increasing the oxygen transportation facility of the blood by raising the hemoglobin to its optimum is very gratifying. Sudden changes in cardiac rhythm, particularly auricular fibrillation or paroxysmal tachycardias should be controlled promptly to avert acute congestive failure. It can readily be seen that the substance of these precipitating factors is an unwanted strain and eventual fatigue of the heart muscles. A stage of weakened reserve is consequently reached in the course of events. Ordinary physical activity produces dyspnea. This phase may last for years but eventually congestive failure ensues.

It is very convenient to divide heart failure into two main patterns, failure of the left ventricle and failure of the right ventricle. Though often one sees subsequent failure of the other ventricle, the dilatation and hypertrophy of one of these muscle masses will dominate the clinical picture throughout. Failure of the left ventricle is more commonly found and is due to hypertension, aortic valve disease and myo-

cardial infarction. The causes of right-sided failure are mitral stenosis, congenital hearts and chronic pulmonary disease. Decompensation of either ventricle may be slow in development or may be so rapid that only emergency measures will be life saving.

RIGHT HEART FAILURE

Acute failure of the right ventricle is characterized by breathlessness, pulmonary congestion, cyanosis, venous engorgement, and enlargement of the liver. If the liver has time to enlarge it may serve as a reservoir of about 1,500 cubic centimeters of fluid and thus decrease the cyanosis and breathlessness. When the failure is too rapid to permit this enlargement, prompt venisection of about 500 cubic centimeters of blood is indicated as a temporary measure until a more conservative regime may be instituted.

Gradual failure of the right ventricle may be first observed by liver enlargement. The wide hepatic veins have no valves and it is probably because the hepatic veins going to the left lobe of the liver have a more perpendicular anatomical arrangement that the left lobe of the liver is apt to enlarge first. This palpably enlarged and tender left lobe of the liver is likely to be associated with nausea. Shortly afterward, the right lobe enlarges. If the liver is tender once a day the failure is definitely progressive and a more rigorous control of the situation is demanded. The patient first may present himself with a trite complaint of pain in the right shoulder. This may be a sign of stretching of the liver capsule. Digitalis is definitely superior to salicylates for the shoulder pain, if one should erroneously suspect and treat for an arthritis. Vomiting is common from liver enlargement because of peritoneal irritation. One occasionally may find a large liver without pain in chronic right-sided failure.

Fluid first appears in the chest. A small hydrothorax may be too small to percuss. It is well to fluoroscope when possible. An x-ray plate is not always dependable. Sometimes one may see the hydrothorax on deep inspiration at the angle of the diaphragm years before signs of generalized failure appear. The hydrothorax usually appears on the right side but because of complete obliteration of the right pleural cavity occasionally fluid accumulation may be found in the left chest. Should it be seen on the left side, an explanation is necessary. It may be an exudate from a pulmonary infarction, which is common in heart patients, or the fluid may be associated with a painless coronary occlusion. In the presence of pain it may be mistaken for pleurisy.

An important sign of decompensation is moist rales at the base of one or both lungs. Mitral stenosis has pulmonary edema and hemoptysis in the begin-

ning, but in the chronic cases there is fibrosis of the pulmonary vessels similar to that seen in emphysema and kyphosis. Thus it is possible to have heart failure with dry lungs.

Measurement of increased venous pressure by means of a manometer has value in observing the response to treatment. The bedside observation of the distended veins of the hand failing to collapse as the arm is raised to and above the level of the right auricle is still a good criterion of venous congestion.

LEFT HEART FAILURE

Failure of the left ventricle is characterized by the early evidence of dilatation and hypertrophy of the left ventricular muscle mass. The dilatation of the valve orifices is accompanied by the advent of murmurs. There may be an associated protodiastolic gallop rhythm heard best between the apex and the xiphoid process. Phenomena which may rapidly make their appearance are pulmonary congestion with measurable decrease in vital capacity, various types of dyspnea and then the sequelae associated with right heart failure, especially liver enlargement and generalized fluid accumulation.

So many of these signs make their appearance before obvious congestive failure occurs that it is worth while considering them with a great deal of care. A mitral murmur in the hypertensive patient is not to be lightly disregarded, particularly if not present in a previous cardiovascular survey. It is time to caution the patient not to exceed a moderate restriction of fluids and sodium chloride and to curtail his activities to the point of avoiding dyspnea. Digitalis should be started at this phase. Pulsus alternans is a sign of impending decompensation and is an absolute indication for digitalis. Should a protodiastolic gallop rhythm be heard digitalisation is essential lest a fulminating pulmonary edema occur in the next few days.

There are many types of dyspnea that are significant of congestive heart failure. In the cardiac patient dyspnea on exertion is progressive. It may be first noted in climbing several flights of stairs. Eventually trifling efforts bring on respiratory distress and the patient must remain at rest to be comfortable. Soon the patient feels short of breath in the recumbent position. There may be more discomfort when lying on the left side but this may be present when lying on the right side or back. Sleeping on several pillows may bring relief but finally it is necessary to assume the upright orthopneic position. The bedfast cardiac may notice that he requires an increasing number of pillows as the day progresses so that by nightfall he has to assume the orthopneic position. Such a patient may first call the physician because he awakens at night with a severe attack of

dyspnea which persists over a few minutes. The attack may subside as he sits in a chair and allows his legs to hang down. Rales may be heard and severe asthma may develop. Adrenalin gives these patients relief. But there already is an elevation of blood pressure in the attacks. Cardiac asthma may be associated with myocardial infarction. Adrenalin thus may be very hazardous. Should pink sputum be expectorated, the condition has progressed to an acute pulmonary edema. There is another type of dyspnea commonly found in early failure of the left ventricle, Cheyne-Stokes respiration. These periods of alternating hyperpnea and apnea are associated so inherently with cerebral lesions, pneumonia, and the effect of opiates that one is apt to disregard the phenomenon in cardiacs. As the patient sinks into slumber the hyperpneic phase awakens him, and with the apneic phase he dozes again. The cycle continues. The patient not aware of what is going on, may complain of sleeplessness rather than breathlessness. The nature of the trouble may have been observed by a relative. Since excitement abolishes this type of breathing, it is found only at night. It may be discovered during the day by observing the patient resting quietly with his eyes closed. The respiration has a cycle of perceptibly increased and decreased excursions. It is much more pronounced at night. If this tendency for some patients to have Cheyne-Stokes respiration is not considered, this fatiguing phenomenon may be exaggerated by barbituates and opiates.

TREATMENT

The essential principles of treating congestive heart failure are the same at whatever phase the patient first may be seen. The heart must be relieved of unnecessary work and made mechanically as efficient as possible. Fluid accumulations must be removed and prevented from reforming. Rest should be complete. If the patient is too uncomfortable in bed, sitting in a chair may be more satisfactory. Reassurance and the building of faith in the planned regime are necessary. There are almost no exceptions to the use of digitalis when there is evidence of congestive failure. Even if there is no arrhythmia, digitalis reduces the size of the heart and improves the fitness of the myocardium.

There are many useful means of removing fluid. Several drugs of the xanthine group produce a modest diuresis. The chloride and nitrate of ammonium or potassium in enteric coated pills, thirty grains three or four times daily, occasionally will control this problem entirely. The mercurial diuretics, Salyrgan-theophyllin, Mercupurin, or Esidrone, are particularly valuable. Massive fluid accumulations should be removed by aspiration early in the

program. Oxygen may be necessary either to tide over pulmonary edema, or to relieve troublesome cyanosis. Intravenous injections of fifty c.c. of fifty percent glucose or 300 c.c. of twenty per cent glucose, given slowly, may be very advantageous, especially in pulmonary edema. But such injections may be harmful in coronary disease. Fluids should be restricted and the output calculated. Excess of sodium chloride should be prohibited. Potassium chloride is an excellent substitute in the salt shaker. A low caloric diet adequate in proteins, carbohydrates and vitamins, should be used. Foods producing gaseous distension should be avoided. Several small meals throughout the day are preferable. Thiamine chloride in large doses should be administered parenterally if there is any question of previous dietary inadequacy or of long-standing liver enlargement. Intramuscular injections of water-soluble liver extract, and intravenous injections of decholin, along with a mercurial diuretic, are particularly useful in cardiac cirrhosis. Adequate sedatives are useful to allay apprehension; but it must be kept in mind that large doses depress the action of the mercurial diuretics. The intravenous use of morphine sulfate, one-sixth grain, is a specific in acute cardiac asthma. While the patient is being digitalized fifteen to twenty drops of one per cent morphine solution may be given prophylactically at night, to prevent nocturnal dyspnea. Morphine is to be avoided in fulminating pulmonary edema. Aminophyllin is an excellent drug to relieve Cheyne-Stokes respiration, four grains may be given twice daily by intravenous or intramuscular route; or six to ten grains may be used in a rectal suppository twice daily. If given intravenously, it must be used slowly, taking three to five minutes, because of its vasodilating action. When given intramuscularly, it is best to add novocaine to control the pain and to prevent necrosis. Add an anesthetic such as benzocaine to the suppository if there are hemorrhoids. Because of the caffeine-like action of aminophyllin it is useful to add a sedative like two grains of sodium phenobarbital or one-sixth grain of morphine to the suppository.

A few remarks about digitalis are pertinent. Don't wait until there is tremendous edema. Start with the first signs of congestive failure. Cheyne-Stokes respiration, cardiac asthma, gallop rhythm, pulsus alternans, rales in the bases, tachycardia with fibrillation in rates above eighty, are clear-cut indications for the institution of digitalis therapy. Many decompensated cardiacs with fibrillation have a more efficient beat when the cardiac rate is in the fifties. The method of dosage is not too important. The slower method is preferable except in very acute heart fail-

ure. Each patient to be digitalized is a separate problem and must be watched for headache, vomiting, bigeminal pulse, multifocal extra-systoles, diarrhea, delirium and colored vision, the signs of intoxication. There is tendency of toxic doses of digitalis to produce auricular fibrillation in children with congestive failure from acute rheumatic fever. The mortality is so high in this particular group that it is advisable to follow these cases with frequent electrocardiographs to detect signs of aberrant rhythm. If gastric congestion is marked, there will be a failure to absorb digitalis given orally. In these cases digitalis is best given intravenously, although it may be given by rectal suppositories or by diluting the tincture from which the alcohol has been evaporated, in a small amount of water and instilling it into the rectum. Digitalis is a drug that is to be continued during the life of the patient.

Tincture of digitalis has almost too many variable factors for routine use. The strength is altered with age and there is a wide variance in the dose from different-sized droppers. The one and one-half grain tablets of powdered leaf are stable. There are many good products on the market. Stick with a product with which you are familiar. Arrange to see the patient daily while he is being digitalized. Many patients will seek help elsewhere if not warned of the onset of headaches or nausea. These are toxic effects just beyond clinical digitalization. There is no advantage of using squill or uginin unless one is treating a very apprehensive individual or a doctor. Strophanthin, one-half of the U.S.P. dose, intravenously, is excellent to secure quick digitalization in acute failure. The same dose may be repeated in twenty or thirty minutes. One must be sure that the patient has received no digitalis in the previous two weeks lest a fatal arrhythmia be produced. When strophanthin is warranted, digitalis is started at the same time. The strophanthin should be given once daily, in decreasing doses the following few days until the digitalis itself is having the necessary effect. Ouabain is an excellent preparation containing strophanthin in ampules. It should be carried in the emergency bag.

The mercurial diuretics have few contra-indications. They are injurious in severe renal disease. They should be avoided when the blood urea is above sixty or seventy mg. per cent, if there are red cells in the urine, or a low specific gravity of the morning specimen. Even extensive albuminuria, per se, is not a contra-indication to their use. Severe cachexia, ulcerative stomatitis and ulcerative colitis are contra-indications. Since 6000 cc. is the average of latent edema before obvious edema appears, don't wait for obvious edema and ascitis. Use the

mercurial diuretics in early congestive failure, any congestion of the veins or liver, dyspnea in mitral stenosis, or in hypertension.

Following an attack of congestive failure, teach the patient to weigh daily. A sudden gain of three or four pounds is an indication for an injection of a mercurial diuretic. Don't give more than 0.5 cc. intravenously at first. It is possible to get so much diuresis as to actually strain the heart. Some patients have an idiosyncrasy to one of the drugs and may develop an erythematous rash with a benign fever. It is then necessary to change to another mercurial diuretic. Ask about the bowels following the first injection. A hemorrhagic colitis with collapse may follow large doses. In a constipated person three or four stools following 0.5 cc. is important. By checking with frequent urinalyses it is possible to give up to two cc. intravenously, two or three times weekly, over an extensive period of time. Particularly if venous pressure is positive, it is preferable to dilute the mercurial diuretic in a few cubic centimeters of sterile water to avoid the necrosis of paravenous injection. Should there be an untoward extravasation, novocaine infiltrated around the site will not only stop the pain but prevent the trophic ulceration.

Theophyllin (theocin) is frequently effective when mercurial diuretics fail. It is best given five grains morning, noon, and night for one day with a rest period of three to five days. Should nausea intervene discontinue the drug.

One should not omit to be on the lookout always for hyperthyroidism superimposed on congestive failure. Evidence of thyrotoxicosis, particularly, a persistent tachycardia which responds only to iodine medication should make one consider thyroidectomy at a suitable time. Here again the surgeon is to be cautioned against the indiscriminate use of intravenous fluid which is a hazard in every surgical cardiac.

CONCLUSION

1. The patient with latent heart disease or diminished cardiac reserve should be carefully educated to prevent or delay ultimate congestive failure.

2. A definite regime to control congestive heart failure, should be instituted at the first signs of decompensation.

3. The physician should be ever watchful of the early signs of failure; the more important are increasing dyspnea on exertion, cardiac asthma, Cheyne-Stokes respiration, orthopnea, cough, rales in bases of the chest, protodiastolic gallop rhythm, pulsus alternans, a developing valvular insufficiency, liver tenderness and enlargement, right shoulder pain, and sudden weight gain.

4. Obesity, anemia and latent thyrotoxicosis are controllable factors that precipitate and maintain obstinate heart failure. Treatment of them may be the balancing measure between invalidism and good health.

A STUDY OF LEUCORRHEA IN GENERAL PRACTICE

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Leucorrhea is any abnormal discharge from the vagina and uterine cavity that does not contain blood. It is a subject of great importance because of its frequency in the female of all ages. It is most frequently found in women during the menstrual periods of their lives but it may be found during the years before puberty and after the menopause.

Before discussing the abnormal discharges it is well to discuss the normal. The vaginal discharge should be enough to keep the walls moist and not enough to require the use of a napkin. This normal discharge is a glairy mucous which has vaginal epithelial cells and a few leucocytes in it. This normal mucous discharge is produced by the cervical glands and the vulvo-vaginal glands of Bartholin and their output is thought to be regulated by the estrogenic hormone. In the adults the P. H. value is generally about 4.0 to 4.4, while in children it is as high as 7.0 to 8.0, which means an alkaline reaction in them and acid in adults. This may be explained by the fact that children have six to fourteen layers of epithelia cells in the vagina while adults have twenty-five to forty.

The vaginal discharge is increased in some women just before menstruation and right after it, due to the increased pelvic congestion. This condition seldom needs any treatment but if any is indicated, a mild astringent douche is best. A mild astringent douche may be made by using a teaspoonful of powder containing equal parts of alum, tannic acid and boric acid to a quart of water. However, these patients should be cautioned about douching too much. Some highly emotional and over-sexed women may have an increased vaginal discharge which causes no pruritus. Mild astringent douches and treatment of the psychological factors help in these cases. The normal vaginal discharge is often increased in some women due to the use of strong contraceptive douches. Obviously the treatment is discontinuance of the strong douches and the possible use of some mild alkaline douche for a time.

In consideration of the abnormal vaginal discharges, we find the most common type is due to

trichomonas vaginitis. The symptoms are generally characterized by considerable pruritus about vulva, and by a continuous, rather bubbly, greenish discharge. About fifty per cent of these cases will complain of frequency of urination and dysuria. Upon examination of the vulva one finds it to be acutely inflamed. There are often small petechial hemorrhagic areas about the walls of the vagina. The diagnosis of trichomonas vaginalis should be confirmed, if possible, by taking a little of the discharge from the vault of the vagina and mixing it with a little normal saline on a warm slide and examining this under the microscope for the parasitic protozoa which have flagella on them and have undulating movements. If no protozoa are found on the first examination and trichomonas vaginalis is still suspected, then the technique of taking the smear must be reviewed. It should be ascertained if the woman has taken a douche before coming to the office. Also be sure that no soap or lubricant used in the examination killed the protozoa.

In the acute case of trichomonas vaginalis an excellent treatment is to have the patients use a concentrated salt solution for a douche, twice a day for one week. The salt solution is made by using two tablespoonfuls of table salt to one glass of water. These patients get daily insufflation of Floraquin powder*, through a vaginal speculum for one week. After this treatment it is well to have the patient place two Floraquin tablets in the vagina each night before retiring and the next morning use a douche consisting of one tablespoonful of lactic acid powder to two quarts of water. This douching is continued for a month or two; it is not stopped during menstrual periods because that is often when the protozoa are most active. Some gynecologists give vaginal insufflations of the Floraquin powder right after the menstrual periods. During the treatments women are advised to keep the anus clean with soap and water so there will not be a recontamination from it. Patients are also advised to keep away from contaminated bath waters. In recurrent cases it is well to examine the prostatic discharge from the male to see if any protozoa are present in it.

The second most common cause of leucorrhea is gonorrhea. The acute cases often have urethritis and a swollen, edematous vulva bathed in yellow pus and seldom have a pruritus. Diagnosis is made by finding the gram negative intracellular diplococci in smears from the urethra and cervix. It is, however, often difficult to get positive smears and culture often helps in making the correct diagnosis. In the acute cases, bed rest and huge doses of sulfathiazole is the best treatment. As much as ninety

grains of sulfathiazole a day can be given for a few days and then the amount is gradually tapered down.

In the more chronic cases of gonorrhea certain specific treatments may be required. Little girls with a gonorrheal vaginitis respond very well to local cleansing and the use of estrogenic suppositories which contain one thousand International units of estrogen. These suppositories are placed high in the vagina each evening for about five or six weeks.

In some chronic cases of gonorrhea the Skene's ducts and the Bartholin glands may be affected. Surgical treatment gives the best results in these cases. In chronic gonorrheal-infections of the cervix light cautery treatments may give good results if it is certain there are no severe residual infections in the pelvis. An old residual infection in the tubes may be lighted up by a cauterization of the cervix. Chronic salpingitis and other chronic conditions in the pelvis are often helped by the Elliott heat therapy treatment. Some of these old residual pelvic infections may ultimately require surgery.

Yeast infections are another common cause of leucorrhea. This condition can be suspected when the vaginal walls have thrush-like patches on them and the discharge is strongly acid. Yeast infections are often found in the latter months of pregnancy. They may be diagnosed by finding the mycelia on slides after proper staining. These yeast infections are treated by painting affected areas in the vagina with two per cent gentian violet for five successive days. After that the patient should use a daily douche containing one teaspoonful of tincture of iodine to two quarts of water.

A fourth rather common cause of leucorrhea is endocervicitis with erosion. If the condition is too acute at first to cauterize then it is well to have the patient use douches for a time consisting of one teaspoonful of iodine to two quarts of water. If there are urinary symptoms, drugs can be given to change the reaction of the urine and this will often help. If the cervix is later cauterized it should first be made certain there is no old residual infection in the pelvis. Occasionally an inflammation of the cervix may be helped by a tampon soaked in a solution containing ten per cent ichthyol in glycerin.

Leucorrhea in women past the menopause may be caused by such conditions as senile vaginitis, carcinoma of the uterus or cervix, and fibroids. Senile vaginitis cases generally complain of considerable pruritus about vulva. The discharge from these cases may be tinged with blood which is caused by pin point bleeding from the vagina. The first treatments may consist of daily douches containing four tablespoonfuls of vinegar to two quarts of water. Later large doses of estrogenic substance will help.

*G. D. Searle & Company.

Cancer, according to Dr. George H. Gardner of the Department of Gynecology and Obstetrics of Northwestern University, is often over-emphasized as the cause of leucorrhea. When leucorrhea is caused by the cancer the malignancy is already well developed. The treatment of cancer of the cervix and tumors of the uterus may be either by surgery or by the use of x-ray and radium.

Pelvic infections, either acute or chronic, may be the cause of leucorrhea. The use of sulfathiazole in the acute cases gives good results and heat therapy is good in chronic cases with surgery later if indicated.

Retroversion of the uterus is another rather frequent cause of leucorrhea. The cervix in these cases should never be cauterized before the uterus is placed in proper position. When displaced uteri are put in proper position by surgery the leucorrhea usually disappears immediately.

In children non-specific vaginitis may appear. A weak mecurial ointment placed around the anus each evening will help cases due to pin worms. Some small girls may have a leucorrhea due to a foreign object in the vagina or the discharge may be due to an imperfect opening in the hymen. In these latter cases it may be necessary to give the patient gas and make a proper vaginal opening.

SUMMARY

Leucorrhea is a frequent complaint among women of all ages. The most common causes of this condition are due to trichomonas, vaginitis, gonorrhea, yeast infections and endocervicitis. However, one must always consider other gynecological conditions in making a differential diagnosis. If a correct diagnosis is made very satisfactory treatments may be obtained in most instances. Many cases respond nicely to medical treatment, which should nearly always be used prior to surgical procedures. Surgery gives the best results in chronic cases.

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In the United States every 3.3 seconds someone is hospitalized—Bulletin of the National Tuberculosis Association.

A School of Nutrition is being established at Cornell University, comparable to its School of Medicine. A two-year course will be offered to students who have completed three years of college work, leading to a degree of master of science in nutrition.

SODIUM HYPOCHLORITE DERMATITIS

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Contact dermatitis, also called allergic dermatitis, is an acute or chronic inflammatory disease of the skin, caused by external irritants of animal, vegetable or mineral origin. This condition formerly was included under the general heading of eczema. In the past decade, due chiefly to the more extended use of the patch test, it has been recognized that many types of eczema are the result of acquired sensitization to the substances with which the individuals come in contact during their occupation.

The number of exciting agents capable of causing dermatitis is almost countless. Many of the substances known as occupational excitants are capable of causing dermatitis in individuals who come into contact with them in the course of their household or social duties. Thus, dermatitis may be produced in housewives by contact with soaps, insect powders or certain vegetables; in women generally from the use of cosmetics or the wearing of dyed dresses or furs, silk or wool, etc.; in men from the use of paints or lacquers, polishes, chemicals, shaving materials, etc., and in children from toys.

Another important group of excitants includes those plants which cause the type often called dermatitis venenata or plant dermatitis, the most familiar example being the *Rhus toxicodendron* popularly known as "Ivy poisoning."

An extremely important group is the dermatitis produced by pollen. This is usually seasonal in occurrence and the excitant is the oily constituent of the pollen.

Another group of excitants includes those drugs which cause a so-called dermatitis medicamentosa (bichloride of mercury, butesin picrate, formalin and many others.)

Contact dermatitis of the hands of housewives is a most common condition; its cure simple as it is, once the cause has been found, is most resistant and almost impossible, if the etiology remains obscure.

Although many instances of dermatitis have probably occurred after the use of solutions of sodium hypochlorite (Clorox) none has been reported as far as I could determine.

CASE REPORT

Mrs. O. S., age thirty-four, about four weeks ago had an infected big toe on the left foot for which she consulted a physician; she was advised to bathe her foot in a weak solution of Clorox. Soon after the beginning of this treatment an extremely itching eruption appeared on the left foot, reaching to above the ankle; at the same time both

hands showed a similar condition and a few patches appeared in the face. The patient consulted a dermatologist and the condition was diagnosed as ringworm; four different kinds of salve were prescribed without benefit, calamine lotion gave slight relief and five intravenous injections did not improve the condition. The patient continued to bathe the foot in sodium hypochlorite solution (one part of Clorox to five parts of water) and the itching on both feet and hands became progressively worse. At this time an irritating vaginal discharge gave her much discomfort. She was recently using a vaginal douche, which it was later learned contained sodium hypochlorite.

Family history: Entirely negative except that the mother and maternal grandmother had eczema frequently; grandmother also had asthma. One sister has hay fever.

Past history: Patient had the usual children's diseases, and pneumonia at five. Has frequent head colds (considered by one physician to be due to food allergy), and tonsillectomy at twenty-seven. Menstruation began at fourteen. She has always had regular, normal periods, and one pregnancy with Caesarean operation. Eighteen months ago she was treated for vaginal discharge which was diagnosed as a fungus infection. She has occasional migraine headache, and a hemorrhoidectomy one year ago.

Examination: Height, sixty-three and one-quarter inches; weight, 118¾ pounds; temperature, 98.6; pulse, regular, of good quality, eighty per minute; blood pressure, 118/80. Eyes, ears, nose are normal on routine examination. Mouth: moderate degree of cheilitis; no herpes; lips are not cyanotic. Teeth are in fairly good condition. Gums are firm and not bleeding. Tonsils have been removed. Pharyngeal wall is normal. Tongue is moist, slightly coated, protruding normally. Heart and lungs: no pathology is found on routine examination. Abdomen: there is a well healed scar reaching from the umbilicus to the symphysis. Much muscular spasticity on deep palpation but no definite tenderness can be made out. Liver is of normal size and the spleen is not palpable. No ascites, no tumor masses. No umbilical hernia. Inguinal glands are of normal size and there is no inguinal hernia. Sex organs: meatus of the urethra is normal in appearance. There is no urethral discharge. Vulva is normal in appearance. On examination with speculum there is a white, cheesy-like secretion. Cervix is healthy in appearance. On bimanual examination the uterus is anteverted, small, easily movable. Tubes and ovaries are not palpable and no tumor masses are found. Rectum: scars as result of previous operation. No external or internal hemorrhoids. Sphincter tone is good. Extremities: there is redness, swelling, scaling and vesiculation on all toes of the left foot; the same condition is also found on the dorsa of the fingers of the right hand and to a lesser degree on the left hand. Skin: a few eczematous patches are found in the circumoral area and on the lobe of the right ear. Neurological findings are normal. Investigation of endocrine nature reveals nothing unusual. Laboratory work, including blood count, blood chemistry, Kahn, B. M. R., gastric analysis and urinalysis showed normal findings.

A patch test over the left forearm with Clorox (one part of Clorox to five parts of water) gave a "blister reaction" in twenty-four hours. Another test with sodium hypochlorite 1:5 to eliminate the possibility of other ingredients in the Clorox was also positive.

Diagnosis: Sodium hypochlorite allergy.

The patient was advised to discontinue the use of Clorox as well as the "new" vaginal douche, and her contact dermatitis as well as the very annoying vaginitis cleared within one week without other treatment. After this patient was completely cured of her troubles. She again had occasion to

use Clorox for disinfecting purposes in her household with recurrence of dermatitis on her right hand. This quickly disappeared after discarding Clorox as a cleaning solution.

Conclusion: A case of sodium hypochlorite allergy is described. Clorox, sodium hypochlorite, is a widely used disinfecting solution in many households. Some of the eczematous dermatitis of the hands of housewives may well be caused by this agent.

INTRAVENOUS ANESTHESIA

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Good anesthesia makes possible good surgery, and although the perfect anesthetic has not yet been discovered, surgery improves as anesthetics become more perfect. Intravenous anesthesia has recently attracted considerable attention, but a peculiar circumstance may be observed in its application: it is used with great enthusiasm in a few hospitals, but in many others it is scarcely accepted and not used at all. Much has been written concerning the application of intravenous anesthesia in large clinics by trained anesthetists, and concerning its use by surgeons in the various specialties. The object of this paper is not to add to this information, or to detract from it, but to impress upon the general surgeons and practitioners in smaller hospitals that this anesthetic may serve them with equal efficiency and gratification. We wish to advance reasons why such a potentially dangerous agent may be as desirable as it is potent, provided it is administered cautiously and scientifically with the same degree of care as any other potent drug.

Since 1935, a small group of physicians at the Bethel Clinic and Hospital have used Pentothal Sodium intravenously nearly 700 times for all types of surgery, and we feel that it has very definite advantages over inhalation, spinal or local anesthesia in many cases.

In recommending a relatively new type of anesthesia as powerful as intravenous barbiturates to fellow practitioners, one must prove that it has definite advantages and must also caution that it be used with respect.

The greatest advantage in the use of intravenous anesthesia is a satisfied patient, and it is here that we find its greatest value. Anesthesia by this method is almost instantaneous; it occurs so suddenly that many patients, when they awake, ask the surgeon not to start cutting because they are not yet asleep. With intravenous anesthesia, the excited stage, commonly seen when ether is used, is usually absent. There is no fighting by the patient, nor does he experience any choking sensation. Nausea and vom-

iting occurred in less than one per cent of all our cases. Occasional yawning and coughing occur, but the patient is unaware of these. Once a patient has had intravenous anesthesia, he prefers it to any other type and he tells his friends about it. Rarely does a patient hesitate to ask for it the second time. Patients have submitted to this procedure as often as six times within two weeks and never complained that it was unpleasant.

Intravenous anesthesia, in its maneuverability, will serve many patients well in minor operations where other types of anesthesia are considered too formidable. Though the patient may endure such minor procedures without an anesthetic if compelled to do so, he does not forget the pain. This is especially true in incision and drainage, dressings, cystoscopies, fractures and repair of lacerations, nearly all of which can be done more satisfactorily under intravenous anesthesia.

We feel that intravenous anesthesia is definitely safer in many cases than any other form of anesthesia. To cite a few examples:

CASE REPORTS

CASE 1.—Girl, age nineteen, in critical condition, temperature 105 degrees, pulse 140 with a retrobulbar abscess. Incision and drainage was done under intravenous Pentothal without shock to the patient.

CASE 2.—Woman, age thirty-five, had a skull fracture, multiple lacerations. She was in chock and was having convulsions. Intravenous anesthesia was given to stop the convulsions and permit immediate repair of wounds. Results were good.

CASE 3.—Man, age seventy-nine; inoperable carcinoma of stomach. He was in poor condition, but a gastroenterostomy was done to relieve his obstruction. Local to skin accompanied by intravenous Pentothal was used for anesthesia with good result.

The following operations have been done under intravenous anesthesia:

Cystoscopic examination and transurethral surgery	320
Incision and drainage	74
Reduction of fractures	78
Gynecologic surgery—D & C Conization	50
Tooth extractions	25
Rectal operations	26
Tonsillectomies	10
Major eye surgery	6
Prostatic resection	12
Major abdominal surgery	11
Suturing of lacerations	42
Miscellaneous	30

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When Pentothal was used in major abdominal surgery, it usually served as an adjunct to local procaine in patients who were very poor risks. The marked absence of shock in these aged and poor risk patients following the procedure prompts us to recommend it very highly. The question may well be

asked: Then why not use it in all major abdominal surgery? However, we prefer spinal anesthesia in all abdominal operations where its use is possible because of the relaxation it produces. As compared with ether in longer abdominal operations, the time may come when intravenous anesthesia will be preferred, but so far we feel that gas ether is safer for these long procedures.

Intravenous anesthesia has been given to patients varying in age from eight years to ninety-three years. In younger children venipuncture is often more difficult and dosages are controlled with more difficulty. We feel that there is no definite upper age limit for the method.

Intravenous anesthesia has been particularly gratifying to dentists and patients alike in tooth extractions, especially where many teeth are removed at once. We have performed ten tonsillectomies under intravenous anesthesia, and these have been sufficient to prove that the method is contraindicated in such cases. Intravenous anesthesia is specifically a respiratory depressant; add to this manipulation in the throat full of instruments or blood obstructing the air passages, and the unsuitability of the method becomes apparent.

Intravenous anesthesia is used by the profession initially because of its advantages to the patient; however, the doctor may soon find himself using it more frequently because it is more convenient, more economical and more fascinating to give than other agents. Other types of anesthesia require special apparatus, whereas an ampule of water and Pentothal and a sterile syringe and needle are all that is needed for intravenous anesthesia. It is extremely simple and economical. In contrast to the long induction period required for other agents, Pentothal Sodium works so rapidly that we insist that all preparations of the field of operation are made before the anesthetic is started. It is often the case, when a minor operation needs to be done, on short notice, that another doctor or an anesthetist is not available. The operating surgeon may, in such cases, start the anesthetic and then turn the syringe over to the attending nurse. While he performs the operation, he directs her specifically as to when and how much of the drug to administer. We have even had the surgeon, without assistants in a home, where circumstances demand it, administer the anesthetic until the patient stops counting, and then remove the needle and perform procedures as incision and drainage or reduction of a dislocated shoulder with very satisfying results.

The possibility of this country entering the present war makes probable even greater application of intravenous anesthesia in emergency war surgery. It will excel for two reasons: First, it can be given

quickly anywhere, and secondly, it is least shocking to a patient already in shock. In brief, it can be said that the administration of Pentothal Sodium has very little effect on the cardiovascular system. There is a slight drop in blood pressure and a slight increase in the rate of the pulse, but not to an alarming degree. Before any serious cardiovascular changes appear the respiratory center is affected and the respiratory excursions are the important criteria which determine the depth of anesthesia and therefore determine how much anesthetic to give and how often to give it. Following the anesthesia there is not the degree of shock found with many other agents. Premedication with morphine, atropine and perhaps barbiturates is desirable in long operations because it will facilitate relaxation, reduce the amount of anesthetic used and avoid much of the immediate postoperative pain and discomfort. In short and minor surgical procedures premedication is unnecessary and possibly even undesirable since the depth of anesthesia is more easily determined when preoperative drugs are not used. In such cases, if the patient is expected to have pain, morphine should be given immediately upon completion of the operation because full recovery of consciousness is very rapid.

Obviously the safety and effectiveness of such a potent weapon as intravenous anesthesia depends upon its effective administration. The fine points of technic can be found in many journals, but a few homely and practical suggestions warrant repetition. At the outset, a quick, accurate and relatively painless venipuncture is absolutely necessary for a successful intravenous anesthesia. Extravasated Pentothal is painful and causes swelling. A five per cent solution is irritating to the veins and therefore a 2.5 per cent solution is often used. When veins at the elbow are used, an arm board is of value. When large veins are thrombosed or buried in fat, a sharp hypodermic needle with an eccentric-tip syringe works very well in one of the veins in the back of the hand.

[The drug is administered always in divided doses as we administer all inhalation anesthetics, a little at a time, sufficient to maintain the minimum anesthesia necessary. And here lies the whole secret of successful intravenous anesthesia. A middle-aged adult can safely take two cc. of a five per cent solution as the initial dose, but old people and children should be started with a smaller initial dose, always remembering that what is put in the vein is there to stay. Since each individual responds differently to the barbiturates, the initial dose is a "feeler," and the patient's reaction to it should be watched with the utmost attention. In about twenty seconds the patient is asked to count or talk and subsequently the anesthetic is continued until he fails to respond.

One-half to one cc. is injected not more often than every thirty seconds, always making sure that respiration is adequate before each successive dose is given. The only indications for continued injections are phonations or reflex movements due to painful stimuli—not the second hand of the clock. In fact, occasional reflex movements and definite regular respiratory movements are the criteria of safety. When surgical drapes obscure the respiratory movements, a fluffy piece of cotton taped loosely in front of the nostrils will indicate the rate and depth of respiration. In most cases it is necessary for some one to support the chin and maintain a free and clear airway.

In conclusion, Pentothal Sodium intravenous anesthesia is recommended in many cases in preference to any other type of anesthesia, and to all practitioners because it is kind to the patient, it is maneuverable, and its use is fascinating to the doctor. However, with this recommendation goes a caution; consider it a powerful drug; give it in small divided doses with safety pauses; and always determine the character of respiration before injecting the next dose.

RELAPSING FEVER*

Harold O. Closson, M.D.

Ashland, Kansas

The history of relapsing fever in the United States has been short but progressive. It has been known as a disease entity since the time of Hippocrates. At various periods it has occurred in epidemics and endemics in nearly all European countries and in Asia and Africa. During the first World War 12,000 cases were reported in Serbia alone and a large number of American soldiers in Europe were affected. It is found endemically in Central and South America as well as in Mexico. Relapsing fever was discovered in the United States among some Irish immigrants in a Philadelphia hospital in 1844. A short time later the disease occurred in epidemic form both in Philadelphia and New York. It was during these epidemics that a physician Obermeier, found the spirochete which established the etiology of the disease. At about the same time an epidemic occurred among some Chinese laborers in California. Following this only a few cases were reported in the United States until in 1915, Meador reported the first endemic cases in this part of the country at Bear Creek Canyon, Colorado. Since then

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endemic cases have been reported from California, Texas, Arizona, Nevada, Kansas, Colorado, Utah, Washington, Oklahoma, and British Columbia.

So far as is known the first case of relapsing fever in Kansas was discovered by Dr. I. R. Burket of Ashland in Clark County, in 1922. The next year he observed three other cases, all three coming apparently from one farm. Since then Dr. Burket and myself have observed a total of seventeen cases of relapsing fever all diagnosed by finding spirochetes in patients blood. There have been three other cases reported to the Kansas State Board of Health one in 1936 from Pawnee County, one in 1939 from Coffey County, and one in 1940 from the city of Wichita.

Earlier accounts of relapsing fever have indicated that it rarely occurred except under conditions of filth, and overcrowding, these opinions being formulated apparently from experience with relapsing fever in foreign countries. The short history of the disease in this country and especially in Kansas indicates just the opposite, that it occurs more in open country, in the more sparsely settled regions, nearly all cases being in farmers.

The cause of relapsing fever is a spirochete. It is commonly long and slender having usually eight undulations, and tapers at both ends to a fine point. Blood smears taken while fever is high and stained with Wright's differential stain, show the spirochetes nicely. The ease with which they are found varies, due partly to the time the smears were taken, also to the severity of the disease, the higher the fever the more the likelihood of finding spirochetes in abundance. Some slides contain large numbers and are easily found, others require long searching. Relapsing fever spirochetes multiply rapidly usually appearing in the peripheral blood about one week after their entrance into the body of the host. They reach a maximum number on the third to the fifth day and then rather suddenly disappear. After a period of quiescence spirochetes reappear but usually in lessened numbers. There is some evidence that this same cyclic development takes place in the body of the tick which is the vector of the spirochete.

According to Dr. Gordon E. Davis of the United States Health Service so far as is known ticks are the only proven vectors of the relapsing fever spirochete in the United States. At the present time there is a louse born type, but it appears only in epidemic form and none has been reported in the United States. (There are three known species of ticks which serve as vectors, the *ornithodora turicata*, *O. hermsi*, and *O. parkeri*.) The *O. turicata* is the one found in Kansas. The habitat of the tick vector varies. Throughout the world many of

the ticks known as specific vectors of this disease have been found to inhabit caves. The condition of soil, moisture, temperature etc. are apparently ideal for their propagation. Some of the first cases occurring in Texas were in boys who had gone into a cave which a later investigation showed was fairly alive with ticks. In Kansas however, the specific tick has been recovered not from caves but from rodent burrows, ground squirrels, prairie dogs, cotton tail rabbits, jack rabbits, burrowing owls, terrapins and snakes. Ticks in large numbers have been found in shallow burrows in banks along main highways. Sand freshly drawn from these burrows are at times fairly swarming with larvae. The three known tick vectors in the United States transmit spirochetes only by bite. All stages of the tick from larvae to adult are infectious, feed rapidly and there is no sensation while they are feeding. In laboratory animals it has been found that a tick became full of blood in twelve to thirty minutes and then dropped off. The per cent of ticks that contain spirochetes varies a great deal, in one group only a single tick may harbor spirochetes while in another group nearly every tick has them. Each infected tick contains a large number of spirochetes and once a tick becomes infected it always stays that way. In one study twenty-one per cent of ticks taken in nature were found to be infected. The larvae from infected female ticks are infected in varying degrees from 0 to 100 per cent. Davis found that in ticks collected from Kansas, choosing one female from each generation and testing all larvae from the first egg laying that nearly 100 per cent of the larvae were infected.

Not all persons bitten by an infected tick will develop relapsing fever for apparently there is an individual susceptibility to the spirochete. Various attempts have been made at using relapsing fever as a means of administering fever treatments to patients with syphilis of the central nervous system. This has not been successful partly because of difficulty in transferring the disease. Wheeler in California attempted to transfer the disease to seven prisoners with syphilis of the central nervous system, by allowing them to be bitten by infected ticks, but only one of these men took the disease. The degree of immunity conferred by an attack of relapsing fever is also uncertain especially in treated cases. The spirochete is apparently resistant to the antibodies developed in a previous attack. This is one of the reason given for the relapsing nature of the disease. One of our patients became reinfected in just three months. He had had a typical initial phase and one relapse and was given two doses of neosalvarsan. He felt perfectly well for three months when he had a return of all his symp-

toms and spirochetes were again found in his blood.

In contrast to the relapsing fever found in other countries the cases we have observed have been in farm people or persons who spent a good part of their time in the country. Our cases were distributed over the entire south half of Clark County, with two cases coming from Meade County, two from Comanche County, and one from Harper County, Oklahoma. In two different instances, three cases came from the same farm. Symptoms in all the patients were more or less identical consisting of generalized severe aching, backache, joint pains, headache, malaise, with some nausea and vomiting. Most cases had no distinct chills, but persistent chilly sensations. Temperature varied from 102 degrees to 105 degrees and last usually five days. Most cases showed a generalized macular rash on about the fourth day. This was so pronounced that one case was diagnosed measles. The rash, however, disappears in twenty-four hours and does not return. The fever and symptoms subside with the rash, the abatement of symptoms being accompanied by profuse sweats. After a few days (varying from two to twelve) of comparative comfort the whole picture was repeated. Usually as the disease progressed the periods of fever and intervals between became shorter and more irregular. Opinions expressed in the literature have been to the effect that the disease is self limited and that patients seldom have more than three relapses. At least three of our cases have been ill for more than one month and were still having relapses of high fever. One of these men had lost forty pounds in weight. The case reported recently from Enid, Oklahoma, had been ill for six weeks and was still having relapses with temperature of over 105 degrees. The disease is suspected by the relapsing nature of the fever and the diagnosis is easily established by the finding of the causative organism in the blood during a paroxysm of fever. A moderate leucocytosis occurs during the period of fever. Positive Wassermann have been reported which disappeared on destruction of the spirochetes. Nothing characteristic was found on physical examination except the rash previously mentioned. Prognosis in the average case is good. No fatality has been reported in the United States. Case mortality in Europe is about four per cent, and in certain epidemics in India and Africa a mortality of thirty to forty per cent has been reported. Treatment is usually simple in that arsenic compounds intravenously are curative. Neo-salvarsan 0.4 gm. for the average patient will usually cure the disease, though at times a second dose must be given. Best results are obtained if the drug is administered when the fever is at its height. A few reports have been made in

which the disease was resistant to neo-salvarsan. Spirochetes have been found in the brain and spinal fluid of man so it might be advisable to repeat the medication at least once following a clinical cure. This is substantiated by one of our cases who developed typical meningitis about ten days after receiving 0.4 gm. of neo-salvarsan at the height of fever in the first relapse. He had all the cardinal symptoms of meningitis, but no organisms were found in the spinal fluid. A right facial paralysis developed which cleared in about two months.

A typical case occurred recently in a young ranch hand. On two successive Sundays he put his arm into coyote holes looking for coyote pups. Exactly seven days from the last exposure he became ill with fever, generalized severe aching and severe chilling sensations. These symptoms lasted for six days. He then felt better for four days except for pain in his back and in back of head and neck, when again he had fever with severe aching and chilling sensations. Forty-eight hours after start of first relapse when temperature was 102 degrees typical spirochetes were found in his blood. Neo-Salvarsan 0.4 gm. was given intravenously since which he has been well.

It is possible that relapsing fever will gradually assume the proportions of a major contagious disease in the United States. How it is transferred from one endemic area to another is not known but it is apparently being gradually distributed. Since the disease has been found in other places to spread faster under crowded conditions, the establishment of Army camps in endemic areas could easily result in a rapid increase in cases. The disease has been found to be much more difficult to control where large numbers of people are crowded together. Only a few months ago a case was reported at Enid, Oklahoma, the first to be reported in that state.

The only means of prevention would be to avoid caves and rodent burrows that were likely to be inhabited by ticks and avoid handling animals which could be hosts to the vector ticks.

Fractures of the Spine.—Fractures of the spine are fairly common, and may result from seemingly trivial injuries. The so-called crush fracture of the spine is the one referred to, and is the one often missed. Indeed it may be missed by early x-ray, but a later picture when bone production takes place will reveal the injury. There may be no pain in these cases for several weeks when the healing bone becomes more sensitive. Insured patients have had early small settlements to their sorrow and financial loss.—Frank R. Ober, M.D.: *Lame Back*, J. M. Soc. State of New Jersey, 37:504 (October) 1940.

SYSTEMIC ACTION OF DRUGS PLACED ON INTACT SKIN

Paul W. Miles, M.D.

Newton, Kansas

"This may explain why some medical agents applied to the skin have almost as much effect as if taken by mouth. Colocynth and aloes applied externally move the bowels, cantharides excites the urine, garlic placed on the feet promotes expectoration, cordials invigorate, and so on. It is not unreasonable to say that the veins take up through their openings some of the things applied externally and carry them in with the blood . . ." From ". . . De Motu Cordis et Sanguinis . . ." William Harvey, 1628.

It is beyond belief today that the circulation of the blood remained an untenable theory for years, and that William Harvey was obliged to present such evidence as the above. Today, this evidence might not have occurred to us, because we seldom resort to stupes and plasters, balms and balsams, sinipisms, and fomentations. However, the fact remains that drugs do penetrate the skin, and a study of the phenomenon is not to be neglected.

Drugs are used on the skin for five purposes: (1) cosmetic, (2) local protection from weather and insects, (3) patch tests for allergy, (4) local treatment of diseased skin, and (5) for systemic action by inunction or counter-irritation. Patients may shun hypodermics, but they instinctively beg for local ointments and applications. Not content with vitamins in its food, the public demands vitamins and estrogenic substances in its cosmetics. A popular sunbathing ointment results in a beautiful tan, but sometimes causes anuria. Hair dye and eye brow pigments are notorious for toxicity. Untaught families complain of lice, and receive "blue ointment" over the counter from the man who is a "doctor in a way." Several deaths have been recorded due to local application of such drugs as phenol, iodine, thallium, chromic acid.

It is known that systemic action results from the penetration of intact skin by scores of such drugs as sulfur, arsenic, strychnine, atropine, pilocarpine, cocaine, chloral, antipyrine, chlorotone, quinine, adrenalin, essential oils, balsam copaiba, ferric chloride, lead acetate, benzidrene, hydrogen sulfide, carbon dioxide. It has recently been shown that certain viruses (proteins) can invade the system through intact skin. Even ponderous molecules like the protein of insulin penetrate human skin in an erratic way; enough to cause hypoglycemia.

There is general agreement among authorities on the mode of entry of drugs into the skin. Although

human skin varies from one-half to four millimeters in thickness, penetration is almost impossible because of its lipid coating, and horny layer. Keratin is a simple albuminoid protein which resists action of pepsin, trypsin, dilute acids and alkalis, and the solvents. To penetrate this layer, mechanical or chemical disruption is necessary.

The single layer of cells lining the sweat glands appears to be a penetrable wall. Experimentally, however, no substance can be made to enter this portal, except after enforced perspiration, which introduces trauma.

It is agreed that the penetrable part of the skin is the pilo-sebaceous orifice. Experience with mercury inunction shows that the only mercury absorbed is that part rubbed into hair and sebaceous follicles. Absorption of various dyes from the skin shows the same phenomenon.¹ Absorption is most rapid from the axilla, loins, and inner surfaces of arms and thighs, areas rich in sebaceous glands. These glands are lined by stratified squamous epithelium, but there is little more than one layer of living cells, and there is no keratin. Sebum consists of cast off cells, which have undergone fatty degeneration, and contains fats, soaps, and waxes made of cholesterol and fatty acids bound to phospholipids like lecithin.

Any substance which causes systemic action when placed on the skin has penetrated lipids, the walls of one or more epithelial cell, a basement membrane, and the walls of a capillary vessel cell.

The permeability of the skin to a drug varies directly with the lipid solubility and inversely with the molecular size of the drug. Lipid solubility is the most important requirement. Highly lipid soluble tri-ethylcitrate penetrates skin much faster than does less soluble methyl alcohol which has a smaller molecule. Lipid soluble butyric acid passes more readily than thiourea and glycerol which have the same size molecule, but are less lipid soluble.

This lipid solubility permits the drug to penetrate the lipid layer of the skin by diffusion. The live cell walls are then traversed by essentially the same process. Rudolf Hober² and E. Nirestein³ have shown that living cell membranes act like experimentally prepared membranes consisting of sterols, phosphatids (lecithin like substances), and a protein meshwork. These artificial membranes permit control of such confusing factors as the following which are present in living cell walls: changing pore size, reaction of cell wall to the drug applied, adsorption of drug on cell wall, adaptation of drug molecule to pore configuration of cell wall, electrical charge of drug particle, its solubility characteristics, hydration of the molecule of drug used, or tendency of molecules to adhere together, presence of foreign sub-

stances or ions in the system, surface tension phenomena, enzymatic activity, and catalytic reactions.

Although dilution hastens penetration of drugs given by mouth, concentration facilitates penetration through the skin. Substances dissolved in the volatile solvents penetrate the skin most rapidly. In descending order, solvent media may be listed: chloroform, benzene, ether, ethylene glycol, alcohol, water, tri-ethanol oleate (vanishing cream), liquid animal fats, goose grease, benzoinated lard, lanolin, vegetable oils and fats, petrolatum, cholesterol. In practical usage, the heavy ointments are often superior because they hold the drug in contact with the skin for a longer period of time. Even when using drugs in a volatile solvent, penetration of the skin is at its peak only after several hours have passed.

The inhibiting effect of small amounts of cholesterol on permeability of the skin was well shown by Winternitz in 1891. He found that by continuous application of one and one-half per cent strychnine solution to the skin of animals, it required twenty-four hours for cramps and death to take place. However, repeating the experiment after first washing the skin with alcohol, death came in only three and one-half to five and one-half hours. Using ether, death occurred in two and one-half hours; with chloroform, thirty to forty-five minutes. These figures are in direct relation to the solubility of cholesterol in the respective solvents. If after the skin is washed by the solvent, dilute cholestesin is re-applied, penetration is markedly slowed.

In the course of experiments on skin penetration, it has been found that the acid state of the skin (due to sweat) also protects against penetration of any substance, and permeability is increased on neutralization.

In choosing a derivative of any drug for systemic action through the skin, one which is lipid soluble must be found. The only exception to this rule in an extensive survey of eighty-seven drugs is mercury and its compounds. For instance, lipid insoluble potassium iodide is not absorbed from the skin, but pure iodine penetrates readily. Inorganic compounds of lead are inert, but when lead acetate or tetraethyl lead is placed in the skin, poisoning results.

Claude⁴ found that various albumins could be coupled chemically with p-diazo-benzene sulfonic acid so that the protein exhibited several highly water soluble sulfonate radicals to the molecule. The usually sluggish protein molecule then became a dye with amazing properties. If a minium of such drug be injected hypodermically, in a few minutes the color can be seen through the skin several centimeters in all directions. If by such coupling, a drug

could exhibit many lipid soluble radicles, skin permeability might be greatly increased. Such an experiment was tried by me in 1938. A diazo-aniline derivative of crystalline insulin was made, resulting in a lipid soluble red dye. On experimental animals, the substance was absorbed through the skin, but had no hypoglycemic effect.

For experiments on skin permeability, dogs are more satisfactory than smaller animals because the skin is thicker and less easily traumatized, and because it contains cholesterol. Absence of sweat glands seems to have no confusing effect. Evidence of penetration of a drug is determined by tests of the blood and urine, expired air, or by post-mortem examination of the tissues by histological staining or by chemical technique.

Application of highly diluted saponin greatly facilitates the penetration of the skin by such drugs as iodine, salicylates, adrenaline, and trypan blue. It is used in certain anesthetic ointments. Saponin is a plant glucoside which in infinitesimal dilution lowers surface tension, emulsified lipids, liberates adsorbed particles, and combines firmly with cholesterol. It is, however, highly irritant, and like histamine may be effective because of skin destruction.

"Vanishing creams" are the best known ointment bases which rub dry in the skin. These creams consist of partially saponified fatty acids with potassium or the alkali, tri-ethanolamine. The latter makes a superior cream which is more soluble in skin fats. Soaps of the lower fatty acids, even acetic acid, penetrate rapidly, but are either odoriferous, too hygroscopic, or too irritating. Lanolin penetrates the skin poorly because it contains cholesterol. Petrolatum is a poor ointment base because it is not absorbed, remains in the follicles, and finally causes fibrosis and scarring.

The "fixed" fats and oils (olive, castor, cottonseed, linseed, corn, etc.) are to be distinguished from the "essential" oils (mustard oil, turpentine oil, clove oil, poison ivy, wintergreen, etc.) The former do not penetrate the skin, and do not permit substances placed in them to penetrate the skin easily⁵. The latter are absorbed from the skin rapidly, partly because of irritation and hyperemia.

SUMMARY

In conclusion, the following may be said: There is potential danger in applying toxic drugs to normal skin. This applies particularly to cosmetics and proprietary remedies sold directly to the public.

To obtain optimum speed of penetration of a drug to be administered by inunction, remove skin fats and cholesterol and neutralize skin acidity by spong-

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President's Page

To the Members of The Kansas Medical Society:

It is apparent that the National defense efforts will further deplete the medical personnel throughout the Nation, especially is this going to be felt in our own State in the more rural communities. May we as a medical group assume the responsibility and promptly take such action as will assure the greatest possible medical service throughout the period of National emergency.

It is to be regretted that no uniform plans for the care of the indigent and semi-indigent in the various counties of our State exists. There must be plans flexible enough to be adaptable to varied requirements of the various sections of our State. The fairness of these should be determined by the following points.

First: The free choice of physicians.

Second: A reasonable compensation for services rendered.

Third: The acceptance by the public of the responsibility for care of the indigent and semi-indigent in the various counties of our State.

Fourth: The simplification of administration in order to keep the administrative costs to the taxpayer at as minimal per cent as is necessary to carry on such a welfare program.

Let us through our Committee on Medical Economics strive to improve the situation during this year.

Sincerely yours,

Clyde O. Blake M.D.

EDITORIAL

THE ORIGIN OF DISEASE

Gowan, in an article on Psychosomatic Medicine, published in the September, 1941, issue of Minnesota Medicine, points to the erroneous use of the term "functional" as opposed to "organic." In cases of obscure etiology physicians are prone to resort to "careless thinking and wasteful inactivity." He states that a functional illness should mean an illness the symptoms of which are due to a disturbance of the function of an organ or group of organs, but as used by the average physician it does not mean that. It has come to imply a condition in which no organic disturbance can be demonstrated. So the functional label has come to mean that the illness is of nervous origin. Gowan makes the point that a functional condition does not arise without cause. To seek this cause requires time and interest and a technique of approach in which the average physician is not trained. The result is that he lapses into a diagnostic fog.

The fusion of subjective and objective findings is a happy consummation, satisfying to the busy doctor. But the confusion in his mind amounts to nothing short of frustration when the patient's history does not make sense. The diagnostic fog which overwhelms the doctor under these circumstances is likely to lead him to blame the patient for being so confusing. He betrays irritation and the patient loses confidence, or the doctor boldly resorts to symptomatic medication without seeking deeply for the cause of the illness. Such patients frequently go from doctor to doctor (unreferred). Many of these unfortunate people finally resort to quacks as the result of inadequate investigation into their emotional background.

Gowan refers to Moschowitz who has listed certain syndromes which are thought to be psychogenic in origin. Spastic and mucous colitis, cardiospasm, peptic ulcer, essential hypertension and exophthalmic goiter. These conditions are represented to be pathologic entities having their origin in the constitution of the patient and developing first as a fixation of an exaggerated function and eventually developing a pathological condition.

Men began to learn of this world by studying the stars, the most remote objects from their environment. Scientists in medicine began to study disease in a similar way. They began by studying the end product of disease as seen in the post-mortem room. Slowly working backward, there is now considerable evidence to suggest that the beginning of many pathological processes is located in the nervous system. Let it be remembered however, that most hypotheses are made in view of a certain aim. The problem is quite evidently to work backward toward the starting point. Scientific medicine will not accept a theory of the origin of disease until it is proven to be true. Pseudoscientists may come forward with interesting hypotheses and real scientists may be led aside. There should be a synthetic formula that will find its way through all contradictions.

HARD-OF-HEARING WEEK

Gove. Payne H. Ratner has designated the week of October 19-25 as Kansas Hearing Week, which will be held in conjunction with the National Hearing Week to be observed throughout the country during the same period. Observation of the week is intended to further interest in conservation of hearing, the prevention of deafness and the rehabilitation of deaf persons.

Since the medical profession is particularly interested in this subject there are many ways in which physicians can help in the furtherance of this work. The American Society for the Hard-of-Hearing, which maintains local chapters in communities desiring to have them, and through which assistance is available in providing lay education on matters pertaining to deafness, in furnishing treatment and hearing aid facilities for indigent persons, in supporting legislation for the control of deafness and in other ways, desires to increase the number and the scope of activities of its local organizations. Kansas physicians can undoubtedly furnish assistance in the institution and operation of this program in communities throughout the state. Likewise, county medical societies can assist their members and their communities through scheduling periodic scientific presentations on the prevention and treatment of deafness.

Deafness is a subject of great economic and social importance to the people of the United States. The medical profession should assist in all ways possible in the control of this problem.

MEDICAL SCHOOL

CHOLECYSTOGRAPHY IN THE PRESENCE OF JAUNDICE

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Kansas City, Kansas

The brilliant contributions to clinical medicine made in the field of roentgenology reached a very high peak of achievement in 1924, when Graham and Cole¹ discovered an opaque media for gall bladder visualization. The advance was not accomplished in one step but represented long and arduous experimental study. The earliest attempts to use the x-ray in demonstrating disease of the gall bladder were made by Buxbaum² in 1898, and Beck³ shortly afterwards demonstrated gall stones on roentgen plates. In 1909 Abel and Rowntree⁴ experimenting with phthalein and their derivatives, proved that phenoltetrachlorophthalein when given subcutaneously was excreted in the bile only. Subsequently Rowntree⁵ introduced this into clinical medicine as a test for hepatic function. However, it was only in 1924, that cholecystography was actually conceived when Graham, Cole, Copher, and Moore⁶ reported that after the intravenous administration of the sodium salt of tetrabromophenolphthalein the gall bladder was visualized on a roentgenogram. Significant as this was, it represented only the final step in ten years of investigation in the chemistry, physiology, anatomy, and roentgenography of the biliary tract.

The principle involved in the new technique constituted a new departure in the use of artificial contrast medium: the utilization of the specific function of an organ to increase the density of the contrast medium. The parallel procedure discovered later is that of intravenous pyelography. Originally it was thought that the procedure would result in new discoveries in pathological anatomy of the gall bladder. It is now known that cholecystography is chiefly a test of the functional capacity of the liver, the gall bladder and their ducts.

Since Graham and Cole's¹ original publication, the chief addition to the substances used, has been their own contribution of phenoltetraiodophthalein sodium. Strangely enough, this substance is one which they had previously discarded. To date no other

substance has appeared which warrants its substitution as the chemical agent in this test.

With this brief review of the history we are ready for the discussion indicated in the title.

Examining the literature on cholecystography comprising 295 articles since 1930, one finds innumerable references to the contra-indications and ineffectiveness of attempts at gall bladder visualization in the presence of jaundice. The most recent such reference is found in Moore's⁷ article appearing in the February, 1940, issue of "Northwest Medicine." In this publication he states "In our hands, we have found that jaundice from any cause whatsoever has invariably resulted in non-visualization of the organ." He further states that Alexander and Bond in his clinic found that non-visualization of the gall bladder resulted in twenty-eight consecutive cases of liver enlargement. It is Moore's⁷ opinion that advanced disease of the liver, from any cause, constitutes absolute contra-indication to cholecystography by either the oral or intravenous route. This represents the opinion of an individual eminently able to speak with authority.

Walsh and Ivy⁸ have shown experimentally that the presence of jaundice did not increase the toxicity of the dye (tetraiodophenolphthalein). Rudisill⁹ grants the possible theoretical contra-indication to cholecystography in toxic and infectious jaundice. Ottenberg¹⁰ concludes that the tetraiodo compounds now in use for gall bladder visualization have on the whole turned out to be surprisingly innocuous. He also assumes a part of the responsibility for spreading the fear of the toxicity of these drugs. This fear he apparently no longer holds as shown by his statement "In spite of the thousands of cases in which these dyes have been used, there is, so far as I am aware, only one death which has been directly attributed to them and there is no evidence that they ever produce clinical liver damage." Kirklin¹¹ states "At one time the presence of jaundice was deemed sufficient reason to forbid the examination; but experience has not confirmed the supposition that the test might be harmful to patients affected with jaundice of any variety." Lange¹² states "It has been our uniform finding that the gall bladder will fail to visualize in the presence of jaundice, irrespective of whether the jaundice is obstructive or infectious." He, however, admits the fact that no untoward effects have been observed in the administration of the dye to jaundiced patients.

Regarding the effectiveness of the process of visualization in jaundiced patients we find the following positive reports. Rudisill⁹ in 1930, reported ten cases with jaundice who received tetraiodophenolphthalein with no untoward effects. Eight of

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these cases were of catarrhal jaundice. In seven of these, the gall bladder cast a shadow. One case was deeply jaundiced, due to a stone in the common duct, and a gall bladder full of stones was well visualized. In 1933, Foley¹³ collected twenty-nine cases at Cook County Hospital in which visualization was attempted, either by the oral or intravenous method. In eleven of sixteen cases of non-obstructive jaundice the gall bladder was visualized. In thirteen cases of obstructive jaundice with stone or carcinoma, none were visualized. Jacobi¹⁴ in 1936, was able to secure positive gall bladder shadows after dye administration in seven out of eight cases of toxic hepatitis. Feldman¹⁵ reports the use of intravenous dye on ten cases of jaundice, four of which filled and six failed to fill. Three of the positive shadows were in patients with catarrhal jaundice, one was in a patient with gall stones.

This disagreement amongst roentgenologists as to the status of cholecystography in the presence of jaundice seems quite obvious. This disagreement needs, however, further analysis. Are routine studies of jaundiced patients discouraged and avoided? If so, is such because of the supposed toxicity of the dye for the liver in the icteric or because of the uniform failure to secure visualization. Moore's⁷ statement above might indicate a combination of both reasons. Lange's¹² statement, while made in a much earlier publication, seemed to indicate only the failure to secure shadows was the reason for the abandonment of cholecystography in patients with jaundice.

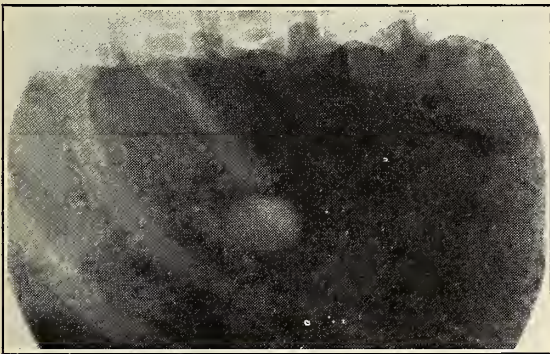


Fig. I. Good visualization of case IV. Icteric Index 126.

The preponderance of opinion obtainable from the literature must be accepted as showing very little evidence for unusual toxic effects of dyes in the jaundiced patient. This apparently is no valid contraindication. These cases have been presented in the past but still the disagreement persists.

Why should there be disagreement regarding the filling of the gall bladder in patients with jaundice? The demonstration of only one case showing a posi-

tive filling in the presence of jaundice would be sufficient evidence to show it does occur. Apparently in the hands of some observers it does not fill. Many roentgenologists prefer and regularly use the oral dye. In the patient with jaundice the gastro-intestinal tract is usually disturbed. Retention of the oral dye in this case is difficult and might complicate accurate study, while intravenous dye might be effective. The frequent use of bile salts and various cholegogues in jaundiced patients prior to administration of dye undoubtedly upsets the expected physiological response. The greatest source of negative opinion is surely due to a lack of routine attempts at cholecystography in all cases of icterus.

Case Number	Clinical Diagnosis	Icteric Index	Degree Visualization	Untoward Racn.	Comment
149083	cholelithiasis	45	++	—	Oral dye, negative stones.
85508	acute hepatitis	80	++++	—	Iv. Dye, Medical Treatment recovery, 6 weeks.
67881	catarrhal jaundice	18	+++	—	Iv. Dye, Medical Treatment recovery, 4 weeks
92493	acute hepatitis	126	++++	—	Iv. Dye, Medical Treatment recovery, 5 weeks
88434	cholelithiasis	165	++	—	Iv. Dye, Recovery after surgery
83269	carcinom common duct	105	+	—	Iv. Dye, Autopsy Confirmation.

Fig. II. Degree of visualization in reported cases.

CASE REPORTS

Case I. White female age twenty-three. Recurrent attacks of typical biliary colic for seventeen months. Last episode occurring one week previous to gall bladder visualization. Oral dye administered at time. Icteric Index was reported forty-five units. Only fair visualization showed many negative gall stones. Intravenous dye was administered after icterus subsided giving similar but clearer pictures. Diagnosis: Cholelithiasis.

Case II. White male age thirty-one. Onset of illness with nausea, flatulence and epigastric discomfort began three weeks before his hospital admission. Upon entrance patient complained chiefly of gastric distress and itching of the skin. The skin was deeply jaundiced and a tender liver edge was palpable two fingers below the costal margin. The untoward reaction followed administration of intravenous dye. Spontaneous recovery occurred after about ten weeks of illness, but was marked by one period during which patient developed much dependent edema and ascites. Diagnosis: Acute Toxic Hepatitis.

Case III. White male age twenty-four. Patient's illness began with upper right quadrant pain, nausea and vomiting two weeks previous to hospital admission. Jaundice had been present for ten days. Icteric Index at the time of administration of the dye was eighteen units. No untoward symptoms followed the dye and a prompt spontaneous recovery occurred. Diagnosis: Catarrhal Jaundice.

Case IV. White female age forty-eight. Patient's illness began with chills, fever, nausea, diarrhea, and epigastric discomfort two weeks previous to hospitalization. Intravenous dye was given without untoward symptoms at the time the Icteric Index was 126 units. Recovery occurred after five weeks of illness. Diagnosis: Acute Toxic Hepatitis.

Case V. White male age forty-seven. This patient began having typical biliary colic two years before admission. Following his last attack eighteen days before admission he became jaundiced for the first time. Intravenous gall bladder dye was given at the time the patient's Icteric Index was 165 units. No untoward symptoms occurred. Recovery occurred after gall bladder surgery. At the time of surgery no stones were found either in the gall bladder or common duct although both were the site of old inflammatory reactions. Diagnosis: Chronic Cholecystitis.

Case VI. White male age sixty-nine. Two weeks previous to admission, the patient was reported having a definite jaundice, apparently painless. The patient was an advanced cerebral arteriosclerotic unable to give a history. The Icterus Index at the time gall bladder dye was given 105 units. No untoward effects resulted but visualization was indistinct. The patient died of a bronchopneumonia and cholemia during his fifth week of hospitalization. At autopsy a small carcinoma partially obstructing the common duct was found. Diagnosis: Mucoid Carcinoma of Common Bile Duct.

SUMMARY

Cholecystography should not be considered contraindicated in patients with jaundice. Our patients showed no ill effects following the use of the dye intravenously. The examination of the current literature would indicate that in spite of opinion to the contrary held by some roentgenologists, clinicians and surgeons, there is conclusive evidence to substantiate the belief that cholecystography does not seriously effect a patient with jaundice. It also seems clear that the gall bladder fills with the dye in a fairly high percentage of patients with non-obstructive jaundice but the opposite is true in the obstructive type. Cholecystography should have a more frequent and wider application. It is quite true, the evidence of aid in the differential may be indirect but still the presence of a well filled gall bladder shadow, in the presence of a deep jaundice may be the only positive sign, indicating a hepatitis rather than an obstructive lesion. It is a definite aid in the difficult differential diagnosis of the patient with icterus.

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TUBERCULOSIS CONTROL

X-RAYING MILITARY MEN

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An order issued October 28, 1940, by the Adjutant General's Office of the United States Army made it possible for civilian organizations to set up a roentgenographic service for men inducted into the Army. It provided for payment for x-ray films and for the services of civilian roentgenologists (under due control) until such time as the Army could assemble its equipment and assume full responsibility.

The Bureau of Tuberculosis of the New York City Department of Health, has been engaged in mass roentgen-ray surveys of the apparently healthy population since 1933. These surveys have been accepted as a basic part of the tuberculosis control program of New York City and thus interest, based on experience, in providing a similar service for inductees and members of the State National Guard was rife. Accordingly, the Bureau's mass roentgen-ray services which were made possible through the WPA, were offered to the Surgeons of the Second Corps Area prior to the Adjutant General's directive that was issued on October 28, 1940. Financial assistance was received from the tuberculosis associations of Queens and the Bronx.

After January 1, 1941, the Army assumed full financial responsibility for the roentgen-ray service in induction centers. The Department provided personnel for the interpretation of films. Since Janu-

ary 15 this service has also been taken over by the Army, which has assigned medical reserve officers qualified in this special field. The roentgenographing of National Guardsmen has been entirely at the expense of the Department of Health. Under existing regulations the Army could not pay for this service until after induction, and it was important that rejections be made before induction.

At the outset there were four induction stations. Since January 1, 1941, all work has been done in two stations, one in Manhattan and one in Queens.

Those rejected men who were residents of New York City were given an appointment within the next two or three days to appear at the Health Department's Central Chest Clinic, where a complete study of the case was made. If this examination proved the original findings to be of no significance, the local draft board was so notified.

Rapid roentgenographic service was necessary as the recruit was supposed to be cleared through all examinations by 2:30 p.m. of the day he reported at the induction station. With from sixty to 300 men per unit to be handled daily, even the rapid roll method used in the routine survey program was inadequate. Consequently a special type of apparatus was devised. A modification of the roll paper camera was used in connection with a specially constructed portable dark room measuring eight by eight feet with the back of the camera integrated into one side of the dark room. A signal device was installed between the roentgen ray technician and the dark room. As soon as a film was exposed, the signal was flashed and the dark room crew cut off the film and placed it in the developing bath. The signal was then reversed indicating that another film was ready to be exposed. A team of three, consisting of a technician and two dark room assistants, were able to operate faster than one exposure a minute. The films were processed in large trays and from the fixing bath were passed out to the physician through a light-proof pass. After being read, the films were washed in a portable tank and dried in a special device designed for the purpose.

Acceptance or rejection was based on Army regulations. Men showing any form of reinfection types of tuberculosis were rejected because lesions of such types may become aggravated under conditions of military service. Primary lesions considered as active or extensive calcifications were likewise cause for rejection. Other forms of significant pulmonary disease, such as bronchiectasis, pneumonitis, atelectasis or extensive pleural changes, were cause for rejection until further study could determine their importance. Men with obviously abnormal cardiac silhouettes

were reported to the medical examiners for such further study as might be indicated. Men with nothing more than apical caps, and those with small well-healed primary lesions were not rejected.

The group of men examined up to January 15, 1941, during which the Department of Health was actively engaged in the program, included 6,609 inductees and 9,541 Guardsmen, a total of 16,150 individuals who were x-rayed.

Of the inductees, 1.36 per cent were rejected and of the Guardsmen, 1.21 per cent. About one-third of the Guardsmen were below the age of twenty-one, while only about 0.5 per cent of the inductees were below that age. An all-Negro regiment (National Guard unit) had the highest mean age in all groups and the highest rate of rejection, which was almost entirely on the basis of pulmonary tuberculosis. If the findings in this unit are subtracted from the totals of all Guard units a greater difference will be found between Guardsmen and inductees.

Classification by stages of disease of the seventy men considered clinically significant shows that 65.7 per cent were minimal, 32.9 per cent moderately advanced and 1.4 per cent far advanced. Primary lesions indicated by calcific deposits were found in 6.0 per cent of the white men, 8.7 per cent of the Negroes and 7.1 per cent of the Puerto Ricans.

The group of men examined since January 16 and through March 31, 1941, totaled 35,210 men. During that period the Department of Health's part has been to re-examine and classify New York City men rejected at the induction center. In this time 458 men have been rejected, 379 of whom have thus far been cleared at the Health Department Clinic. In forty-nine, or 12.9 per cent of those re-examined the cause for rejection at the induction station was not confirmed and the man was considered suitable to be accepted in the Army from the standpoint of his roentgenogram.

A detailed cost analysis of personnel, equipment and materials necessary to complete this study indicated a total of \$23,614.20. Using this as a basis for computation, the unit cost to examine each individual by roentgenogram was \$1.47. (The cost of taking a roentgenogram and its interpretation without any further follow-up was \$13,911.20, or 58.8 per cent of the total.) The unit cost of rejecting a man for military service on the basis of the total cost was \$106.02 for inductees and \$122.37 for Guardsmen.

Spillman has reported that the cost to the federal government of accepting a person with tuberculosis into the armed service is \$10,000. Thus, in these studies involving 41,819 inductees and 9,541

Guardsmen, or a total of 41,360 men, 561 persons with chronic pulmonary tuberculosis were rejected, representing an estimated saving to the government of \$5,610,000. — From Tuberculosis Abstracts, October, 1941, reprinted from the Journal of American Medical Association, July 5, 1941.

SYSTEMIC ACTION OF DRUGS PLACED ON INTACT SKIN

(Continued from Page 430)

ing the dry skin with chloroform saturated with ammonia, and apply a lipid soluble derivative of the drug in a "vanishing cream" base.

Each drug is a problem in itself for reasons cited, and requires testing in various combinations.

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LEGAL MEDICINE

OSTEOPATHIC PRACTICE

An opinion of particular interest in regard to the practice of medicine and surgery by osteopaths was handed down by the Kansas Supreme Court on October 11.

The opinion, which was prepared on behalf of the Court by Justice Harry K. Allen and which pertained to the injunction cases filed against osteopaths C. V. Moore of Medicine Lodge and O. E. Muecke in the Barber County District Court and the Pratt County District Court respectively, is as follows:

As authorized by G. S. 1939, Supp. 65-1010, the actions were brought to oust the defendants from the unlawful practice of medicine and surgery. The appeal in the Moore case, is from Barber county; in the Muecke case, is from Pratt county. The issues raised are similar and the cases were argued together at the bar of this court. It will be convenient to dispose of both cases in one opinion.

The petition in the Moore case alleged:

"3. That the defendant, C. V. Moore, has never been and is not now licensed by the Board of Medical Registration and Examination of the State of Kansas, and the defendant is wholly without any right, power or privilege to engage in the practice of medicine and surgery in the State of Kansas. And particularly the defendant is without

any right, power or authority to use drugs as remedial aids.

"4. That continuously for more than a year past the defendant, C. V. Moore, has usurped the right, power and authority to practice medicine and surgery. That the defendant, C. V. Moore, has on numerous occasions and at diverse times engaged in the unlawful practice of medicine and surgery in that he has prescribed and recommended, for a fee, drugs and medicines found in and comprising a part of *materia medica*, and that such drugs and medicines have been by the defendant prescribed and administered for the cure of bodily infirmities or diseases of other kinds and for a fee paid to this defendant. That the defendant has held himself out and represented himself to be lawfully engaged in the practice of medicine and surgery and has held himself out as authorized to treat the sick by means and through the use of drugs and medicines found in *materia medica*. That the defendant has treated medically and prescribed and dispensed medicines to a large number of persons whose names are to this relator unknown and for that reason not more particularly alleged.

"That unless ousted by an order of this court and enjoined from the further use of medicine and surgery and the use of medicine and drugs found in *materia medica*, the defendant, C. V. Moore, will continue to practice medicine and surgery within the County of Barber and State of Kansas without lawful right or authority and will continue to violate the Laws of the State of Kansas by such practice."

Two specific instances are set out where drugs were prescribed by the defendant. It was alleged that unless ousted by an order of the court the defendant will continue to practice medicine and surgery contrary to the laws of Kansas.

As the appeal is from an order of the court striking certain portions of defendant's answer, we set forth pertinent portions of the answer, and have inserted brackets to indicate that part of the answer which was stricken:

"The defendant admits that he is not now and never has been licensed by the Kansas State Board of Medical Registration and Examination. The defendant admits that he did on the 25th day of November, 1939, prescribe for a Mrs. Dewey McKaeg, as set out in Exhibit A attached to the petition, and that he did on the 25th day of October, 1939, prescribe for a Mrs. Leo House, as set out in Exhibit B attached to the petition [but defendant specifically denies that in doing so he was practicing medicine and surgery as that term is used in the Medical Practice Act, and alleges that said prescriptions were given in connection with his practice as an osteopathic physician, and constituted a part of the practice of osteopathy as taught and practiced in legally incorporated colleges of osteopathy of good repute, all as he is authorized and licensed to do under the provisions of General Statutes of Kansas for 1935, 65-1201].

"SECOND DEFENSE

"The defendant as a second full and complete defense to the cause of action attempted to be set out in the petition filed herein, alleges and states:

"1. That the defendant holds a certificate granting him the right to practice as an osteopathic physician duly issued by the Board of Osteopathic Examination and Registration, as provided by the 1935 General Statutes of the State of Kansas, 65-1201, and has been duly licensed to practice osteopathy since March 4, 1929, and is duly registered as an osteopathic physician.

"2. That the Osteopathic Practice Act of the State of Kansas (Gen. Stat. 1935, 65-1201) grants to the defendant, as a duly licensed and registered osteopathic physician, the right to practice osteopathy in the State of Kansas as taught and practiced in the legally incorporated colleges of osteopathy of good repute.

"3. That osteopathy is recognized as a school of medicine based upon the theory that the normal body when in correct adjustment, is a vital machine capable of making its own remedies against infections and other toxic conditions. The office of physicians of this school is to search for and when found, remove if possible, any peculiar condition in joints, tissues, diet or environment, which are factors in destroying the natural resistance, and provide symptomatic relief while a cure is being effected. The measure upon which he relies to effect this end, are physical, hygienic, medicinal and surgical, while relying chiefly on manipulation.

"4. The use of surgical instruments for operative treatment to remove unnatural growths and diseased or decayed parts of the body that cannot be rehabilitated, and the use of drugs and other medicinal agencies, is an important and necessary part of the practice of osteopathy, is taught and practiced in legally incorporated colleges of osteopathy of good repute as such, was an important part of the practice of osteopathy during the year 1913 and prior thereto, and was during the year 1913 and prior thereto, taught and practiced as an important and necessary part of osteopathy in legally incorporated colleges of osteopathy of good repute.

"The defendant in his practice of the healing art, has not and does not desire to practice medicine and surgery, as that term is used in the Medical Practice Act. The defendant has not practiced and will not practice anything other than osteopathy as osteopathy is taught and practiced in legally incorporated colleges of osteopathy of good repute.]

The appeal is from the order and judgment of the court in sustaining the motion of the plaintiff to strike from the answer that part of the answer enclosed in the brackets.

The petition in the Muecke case is similar in form to the petition in the Moore case, except that it sets up no specific instances of the prescription of drugs. The petition does charge, however, that the defendant Muecke performed a surgical operation for the removal of tonsils by the use of surgical instruments. Specific instances of that particular surgical operation are set forth. It was also charged that he used the title of "physician and surgeon" in connection with his name and represented that he was engaged in the practice of medicine and surgery.

The answer in the Muecke case was similar to the answer in the Moore case, and upon motion a corresponding portion of the answer was stricken. The appeal in the Muecke case is from the order of the court in sustaining the motion to strike such portion of defendant's answer.

The acts charged in the petition are admitted by defendants. In that part of the answers stricken, defendants allege that they hold certificates from the Board of Osteopathic Examination and Registration as provided by G. S. 1935, 65-1201, are duly licensed to practice osteopathy, and that doing and performing the acts charged did not constitute the practice of medicine and surgery within the medical practice act, but that such acts constituted the practice of osteopathy as taught and practiced in legally incorporated colleges of osteopathy of good repute as defendants were authorized and licensed to do under the statute.

Defendants assert the court erred in sustaining the motion to strike. Plaintiff asserts that the order sustaining the motion is not an appealable order, and contends the order of the court in sustaining the motion to strike was properly entered.

The questions now presented and the contentions now urged upon us received careful consideration by this court in our recent cases. *State, ex rel., v. Gleason*, 148 Kan. 1, 79 P. 2d 911; (see, opinion on postdecision motions, same case, 148 Kan. 459, 83 P. 2d 425) *Gafney v. Wilson County Hospital*, 150 Kan. 945, 96 P. 2d 613. (Opinion on motions, same case, 152 Kan. 1, 102 P. 2d 893.)

The issues presented by the record before us are essentially the same as in the Gleason and Gafney cases. In substance we are asked to reconsider the above decisions. While the appeal might well be disposed of by a reference to our former decisions, we have examined with care the arguments urged upon us in the very able and candid brief of counsel for defendants.

In the Gleason case the applicable statutes were analyzed and our conclusions stated. Obviously we are not to enlarge this opinion by a mere repetition of the careful statements formulated in that case. We shall therefore summarize the views heretofore expressed in our various decisions, and supplement the same with such comment as may be called for in response to the points urged in the brief of defendants.

The solution of the questions presented lies in the true construction of our statutes. There is no dispute here. Nor can there be any dispute to the propositions that the construction of a statute is a function of the judiciary—that it is a question of law for the courts, not a question of fact for a jury.

In construing a statute the legislative intention is to be determined from a general consideration of the whole act. Effect must be given, if possible, to the entire statute and every part thereof. To this end it is the duty of the court, so far as practicable, to reconcile the different provisions so far as to make them consistent, harmonious and sensible. Thus, in *Judd v. Driver*, 1 Kan. 455, 464, it was said: "It is a uniform rule of construction that one part of a statute should be construed by other parts of the same statute so that, if possible, no clause or part shall be treated as superfluous, and especially when the two are parts of the same section." In *Bridge Company v. K. P. Rly. Co.*, 12 Kan. 409, 413, it was stated: "Another rule is, that a statute should be so construed that effect be given if possible to every clause and section of it." Again in *Gardenhire v. Mitchell*, 21 Kan. 83, 88, it was stated: "The statutes must be so construed as to harmonize their various provisions and, so far as possible, to give reasonable effect to all." (See, also, *State, ex rel., v. Mitchell*, 50 Kan. 289, 33 Pac. 104; *McCreedy v. City of Fort Scott*, 113 Kan. 753, 216 Pac. 287; *Barrett v. Duff*, 114 Kan. 220, 217 Pac. 918.)

It is also a well-settled rule that statutes *in pari materia* are to be construed together. (*Atchison & Eastern Bridge Co. v. Atchison County Comm'rs*, 150 Kan. 24, 91 P. 2d 34.)

The purpose of the legislature is not discovered by an examination of one sentence or one section, but by a comparison of the pertinent provisions of the various sections, and by construing them in the light of the purpose to be accomplished. *Iola B. & L. Ass'n v. Allen County Comm'rs*, 152 Kan. 365, 103 P. 2d 788.

What was the meaning of osteopathy under our statutes prior to the Act of 1913? That question came before this

court in *State v. Johnson*, 84 Kan. 411, 114 Pac. 390. It was there stated:

"... Osteopathy is carved out as a separate department, and registration and license are required, while its practitioners are prohibited from giving medicine and performing surgical operations—that is, from practicing medicine and surgery as distinguished from osteopathy. But medicine and surgery, which the appellee is charged with attempting to practice, by common use and adjudged meaning cover a wide portion of the domain of healing, and may and should be held to cover the case of one who, not claiming to be a physician or surgeon, really practices osteopathy under another guise without possessing the qualifications required of the osteopath. Osteopathy is defined as "a system of treatment based on the theory that diseases are chiefly due to deranged mechanism of the bones, nerves, blood vessels, and other tissues, and can be remedied by manipulations of these parts." (Webster's New Inter. Dict.) It has been judicially defined as 'a method of treating diseases of the human body without the use of drugs, by means of manipulations applied to various nerve centers—chiefly those along the spine—with a view of inducing free circulation of the blood and lymph, and an equal distribution of the nerve forces. Special attention is given to the readjustment of any bones, muscles, or ligaments not in the normal position.' (6 Words & Ph. Jud. Def. p. 5070.) Medicine is defined as 'the science and art dealing with the prevention, cure, or alleviation of disease; in a narrower sense, that part of the science and art of restoring and preserving health which is the province of the physician as distinguished from the surgeon and obstetrician.' (Webster's New Inter. Dict.) The same authority defines surgery as the 'art or practice of healing by manual operation; that branch of medical science which treats of mechanical or operative measures for healing diseases, deformities or injuries.'

"The legislature has, by the statutes referred to, treated osteopathy as a separate department, and covered all the other branches of the healing art by the term medicine and surgery. As new schools of practice come into favor their followers must possess the requirements for the practice of medicine or surgery, or prevail upon the legislature to make separate provision for them as it has done for the osteopath."

The general rule is that where a statute has been construed by the highest court having jurisdiction to pass on it, such construction is as much a part of the statute as if plainly written into its originally. (59 C. J., Statutes, sec. 613; Crawford, Statutory Construction, sec. 184; 2 Lewis' Sutherland, Statutory Construction, sec. 485.)

Thus by the statutes then in force and "by common use and adjudged meaning" osteopathy was defined and distinguished from the practice of medicine and surgery. It had a well known and clearly defined meaning.

Was the meaning of osteopathy as defined by the court enlarged or extended by the Act of 1913? All statutes are presumed to be enacted with full knowledge of the existing condition of the law and with reference to it. (59 C. J., Statutes, Sec. 616.) It is therefore a significant fact that the Act of 1913 did not define or attempt to enlarge the narrow definition formulated in the Johnson cases decided two years previously. By every rule of construction it retained its original meaning.

In *State, ex rel., v. Eustace*, 117 Kan. 746, 233 Pac. 109, decided in 1925, the defendant contended he had the right to practice optometry under his certificate of registra-

tion as an osteopath. The court stated that "osteopathy is not defined in the statute."

The court further stated:

"... We must look to the law books for the definition of the term. 3 Words and Phrases, 2d series, 803, defines osteopathy as 'a method of treating diseases of the human body without the use of drugs, by means of manipulation applied to various nerve centers, chiefly those along the spine, with a view to inducing free circulation of the blood and lymph, and an equal distribution of the nerve forces. Special attention is given to the readjustment of any bones, muscles or ligaments not in the normal position. It is that method of the healing art accomplished by a system of rubbing or kneading the body.'

"Osteopathy when practiced by a physician or surgeon, as is defined in section 65-1005, may be and probably is a part of the art or science of healing, but the practice of osteopathy, while it may be a part of the art of healing, is not comprehended within the term 'practicing medicine,' nor within the term 'surgical operation,' as used in section 65-1005, of the Revised Statutes. Section 65-1508 of the Revised Statutes, providing that nothing in the optometry act shall be construed as preventing regular registered physicians and surgeons from practicing optometry, does not include those who are registered to practice osteopathy."

In Webster's New International Dictionary, (1935 Ed.) osteopathy is defined as follows:

"a Any disease of the bones. b A system of therapeutics based on the theory that diseases are due chiefly to mechanical derangement, esp. displacements of bones, as the vertebrae, with resultant pressure on nerves and blood vessels and corresponding interference with innervation and circulation. Treatment is directed toward mechanical correction, esp. by manipulation of the parts."

In Funk & Wagnalls New Standard Dictionary, osteopathy is defined as follows:

"1. A system of treating disease without drugs, propounded by Dr. A. T. Still, 1874. It is based on the belief that disease is caused by some part of the human mechanism being out of proper adjustment, as in the case of misplaced bone, cartilage, or ligament, adhesions, or contractions of muscle, etc., resulting in unnatural pressure on or obstruction to nerve, blood, or lymph. Osteopathy, through the agency or use of the bones (especially the long ones which are employed as levers), seeks to adjust correctly the misplaced parts by manipulation. 2. Any disease of the bones."

In the Century Dictionary and Cyclopedia, osteopathy is defined as follows:

"A theory of disease and a method of cure, advocated by Dr. A. T. Still, resting upon the supposition that most diseases are traceable to deformation of some part of the skeleton (often due to accident) which, by mechanical pressure on the adjacent nerves and vessels, interferes with their action and the circulation of the blood. As a remedy a form of manipulation is used."

In *Mabry v. State Board of Examiners*, 190 Ga. 751, 10 S. E. 2nd 740, the action was to enjoin the defendants from practicing optometry. The contentions of defendants are thus stated by the court:

"... Secondly, the defendants contend that by the Code, sec. 84-1209, a licensed osteopath is authorized to practice osteopathy as taught and practiced in legally incorporated and reputable colleges of osteopathy as provided in chapter 84-12; that Turner holds a license as an osteopath, that such license authorizes him to practice what he

was taught and what he practiced in the college from which he graduated, inasmuch as that college meets the Code requirements; and that since he was taught ophthalmology, which includes measurement of power of vision and adaptation of lenses to correct faulty or defective sight, he can practice this by virtue of his license.

"The Code, sec. 84-1209, declares that Turner's license authorizes him to practice osteopathy as taught and practiced in the legally incorporated and reputable colleges of osteopathy as defined in chapter 84-12. Unfortunately for the courts, when enacting chapter 84-12 relating to osteopathy in 1909, the legislature did not define the meaning of osteopathy, but left its meaning to be determined by how it was taught and practiced in reputable colleges of osteopathy. The language of the statute of necessity requires an examination of these facts as they are found to be in reputable colleges of osteopathy. . . ."

After quoting various definitions of osteopathy, the court stated:

"... From these definitions it is apparent that osteopathy is based on the theory that human ailments result from disarrangement or misplacement of bones, nerves, and blood vessels, and that the cure for the ailment is the correction of such misplacement, thereby giving nature an opportunity to heal. It follows that to be a reputable college of osteopathy as referred to by our statute the course of study taught and practiced must conform to these authoritative definitions. It is also true that any course taught or practiced at such colleges which is outside the true scope of osteopathy can not be brought within its scope merely because it is given by an osteopathic college. The Code, sec. 84-1209, properly construed, authorizes the licensee thereunder to practice osteopathy, and that only as taught by reputable colleges."

Well considered decisions in other jurisdictions carefully distinguish the practice of osteopathy from the practice of medicine and surgery. (*People v. Fowler*, 32 Cal. App. 2d 737, 84 P. 2d 326; *State v. Wagner*, — Neb. —, 297 N. W. 906; *Burke v. Kansas State Osteopathic Ass'n*, 111 F.2d 250; *Georgia Ass'n of O. Physicians and Surgeons v. Allen*, 31 Fed. Supp. 206.)

The words of a statute must be taken in the sense in which they were understood at the time the statute was enacted. (25 R. C. L. 959; *People v. Fowler*, supra.)

The effect of the words in G. S. 1935, 65-1201 "as taught and practiced in the legally incorporated colleges of osteopathy of good repute" is not to set at large the settled meaning of osteopathy and obliterate the distinction between the practice of osteopathy and the practice of medicine and surgery.

Under G. S. 1935, 65-1201 and 65-1202 the board is authorized to grant a certificate to practice osteopathy only to persons who have met certain requirements. Those who have not met these requirements and who have not graduated from an osteopathic school or college of good repute are not eligible to receive a certificate. The obvious purpose of the legislature was to exclude the unfit, and thus protect the osteopathic profession as well as the public. The purpose, as we read the statute, was not to enlarge the meaning of osteopathy but to guard that profession from applicants who had graduated from schools of low standards that purported to teach osteopathy.

We have set forth above authoritative definitions of osteopathy. To be a reputable college of osteopathy within the meaning of our statute the course of study taught and practiced must conform to those definitions. The theory of defendants that they are authorized to practice what-

ever might be taught in such schools cannot be sustained by a fair construction of our statutes, by the former decisions of this court, and is not supported by any well considered case in any other jurisdiction which has been called to our attention. To say that the scope of practice of an osteopathic physician in this state is measured by what is or may be taught in osteopathic colleges of good repute is equivalent to saying that the law of Kansas fixing the boundary line between the practice of medicine and surgery and the practice of osteopathy must be determined by the shift in the subjects taught in an unknown number of colleges in an unknown number of states. We find no warrant for this contention upon any proper construction of our statutes.

In the brief for defendant it is stated that "What constitutes the scope of osteopathic practice under our statute is a question of fact and a question of fact only." This is another way of asserting that the proper construction of a statute is a matter for the jury and not for the court. If the theory of defendants was put in practice the law would be as chameleon-hued as the various verdicts of successive juries. The contention cannot be sustained. (See authorities above cited.)

In *State, ex rel., v. Gleason*, supra, the proceeding was in quo warranto to oust the defendant from the unlawful practice of medicine and surgery. The defendant in his answer alleged:

"Defendant admits that he is a duly licensed osteopathic physician and surgeon as alleged in paragraph 4 of said petition and states that as such he has for many years treated patients both medically and surgically, as alleged in said paragraph 4, and is now so doing.

"Defendant for his further answer states that he is authorized, empowered and privileged to engage in the practice of medicine and surgery, including drug therapy, under his license as an osteopathic physician and surgeon as defined by section 65-1201, G. S. 1935, and states that at all times mentioned in said petition he has treated patients both medically and surgically as taught and practiced in legally incorporated colleges of osteopathy of good repute."

As some question is raised as to the scope of that decision, we quote from the final order (148 Kan. 459, 460, 83 P. 2d 425):

"Upon the hearing of these motions we were informed by the assistant attorney general, who has handled the case on behalf of plaintiff from the beginning, that this action was brought at the request of those licensed in his state to practice osteopathy, including the defendant, and for the sole purpose of having the decision of this court upon the major questions of law involved, which questions were formulated by defendant and were submitted to the court and decided in its opinion, and that it was not contemplated to ask the court in this case to go into the details of the narrow field where the two systems of healing, otherwise well outlined as being separate and distinct, might have some things in common, and to say that a specific act or thing could or could not be done lawfully by an osteopath. These statements as to the circumstances under which the action was brought, and the purposes it is designed to accomplish, were not controverted by defendant. We think, therefore, that final judgment should be entered in this case in harmony with our opinion, and that the motion for the appointment of a commissioner should be overruled.

In its petition plaintiff alleged defendant owns and operates a hospital in which he practices medicine and surgery

generally, and in which he permits other persons licensed only as osteopaths to practice medicine and surgery generally. We are asked to oust defendant from so practicing medicine and surgery in his hospital, and this will be done. We are asked also to oust him from permitting others, licensed only as osteopaths, to practice medicine and surgery generally in his hospital. We decline to make that order, since it would require defendant to watch continuously what other licensed osteopaths are doing in his hospital. We think that burden should not be put on defendant; that those licensed as osteopaths only should guard their own conduct in this respect. The hospital, of course, may be operated lawfully for the practice of osteopathy. Persons licensed only as osteopaths, if heretofore mistaken as to their authority with respect to the practice of medicine and surgery, and who, because of such mistake, had extended their practice into a field in which they are not authorized to engage, should, and in all probability will, hereafter conform their practice to the science or system of osteopathy as distinct from the practice of medicine and surgery, in harmony with our statutes as construed in our opinion in this case. If defendant, or any other person licensed only as an osteopath, should fail to confine his practice of the healing art to the science or system of osteopathy, as that term is used in our statutes, as interpreted and construed in our opinion, any remedies the state or others have with respect thereto are not abrogated or decreased by anything we have said in this case.

"Therefore, it is by the court considered, adjudged and decreed that the defendant, B. L. Gleason, be and he is hereby ousted from the practice of medicine and surgery; and it is further adjudged and decreed that under his license to practice osteopathy he is limited in the practice of the healing art to the practice of the science or system of osteopathy authorized by our statutes pertaining thereto, as such statutes have been defined and construed in the opinion of the court heretofore rendered in this cause."

Defendants also question the extent of our ruling in *Gafney v. The Wilson County Hospital*, supra. In the opinion on the motions (152 Kan. 1, 2, 102 P. 2d 893), it was stated:

"The motion of defendant to strike parts of plaintiff's petition is sustained to this extent: Paragraphs B and D of plaintiff's amended petition do not state a specific cause of action, nor do they tender an issue which can properly be litigated between the parties to this action, and those paragraphs are declared stricken."

In a footnote to this opinion we set forth paragraphs B and D which were ordered stricken. An examination of the allegations stricken will disclose that the questions there decided are substantially the same as now urged upon us.

We adhere to the conclusions reached in our former decisions. The views therein expressed reconcile the different provisions of the statutes so far as to make them consistent, harmonious and sensible. The matter stricken by the trial court was a mere conclusion of law and constituted no defense to the acts charged. While defendants were authorized to practice osteopathy, they were not authorized to practice medicine and surgery. The acts charged constituted the practice of medicine and surgery as defined by G. S. 1935, 65-1005.

We have given careful consideration to that part of the answer of defendants wherein it is alleged that the use of surgical instruments for operative treatment to remove unnatural growths and diseased or decayed parts of the body that cannot be rehabilitated and the use of drugs and other

medicinal agencies to provide symptomatic relief while a cure is being effected, is an important and necessary part of the practice of osteopathy. In *Burke v. Kansas State Osteopathic Ass'n*, 111 F. 2d, 250, it was held as stated in the syllabus:

"The need, if any, of using narcotics or other drugs to relieve pain in administering treatment by osteopathic therapy should be addressed to the Kansas Legislature, rather than to the courts."

We find no authority in our statutes for the limited use of medicine and surgery contended for by defendants, and it is beyond the power of this court to write an exception into the statute. Clearly this is a matter for the consideration of the legislature, not the courts.

It follows that the order of the court in sustaining the motion to strike was not an appealable order and that the appeal must be dismissed. The appeal is dismissed.

Attorneys for the plaintiff were, Mr. Theo Varner of Independence, Mr. O. M. Wheat, county attorney of Barber County and Mr. Milburn Geist, county attorney of Pratt County. The attorney for the defendants was Mr. Earl Hatcher of Topeka.

NEWS NOTES

SELECTIVE SERVICE

Recent announcements from Washington indicate that the National Selective Service Headquarters plans to make a change in the present method of providing physical examinations for selective service registrants.

It is said that the Selective Service Headquarters feels that the present program in this regard involves a considerable imposition upon physicians and that therefore efforts have been and are being made to devise plans wherein this may be avoided.

An experiment has been conducted in the state of Pennsylvania during the past, through which traveling induction boards have been utilized, for the provision of selective service physical examinations. Under the plan only one examination has been provided instead of two separate examinations, as has been required in other places. The physicians assisting in this capacity have been paid a per diem rate for their service.


It is also said that Selective Service Headquarters believes the Pennsylvania experiment has been successful and that this method and certain variations thereof will be instituted in the other states within the near future.

MEETING

The Southern Medical Association has extended the members of The Kansas Medical Society an invitation to attend its Thirty-fifth Annual Meeting, which is to be held in St. Louis, Mo., on November 10-13. The Southern Medical Association meeting is said to be one of the best district postgraduate assemblies in the country and it is believed that many Kansas physicians will desire to attend.

Details of the St. Louis session are as follows: The meeting will open on Monday, November 10, and will

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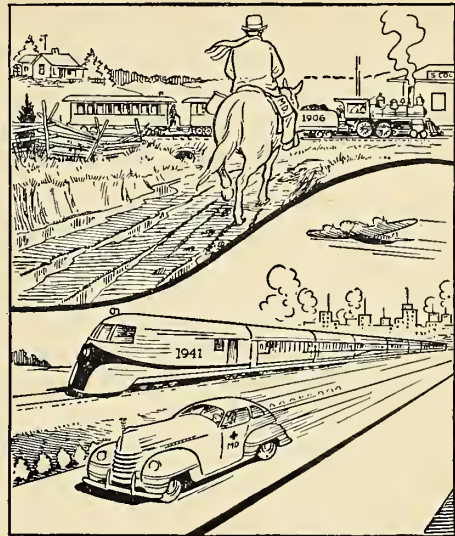
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SUCH a singleness of purpose and devotion to an ideal accounts largely for a history of unusually successful annual meetings, each better than the last. Logically, the past is a basis for predicting another top meeting at St. Louis, November 10-13.

REGARDLESS of any physician's medical interest, there will be much to challenge this interest at St. Louis. Eleven general clinical sessions, nineteen sections, three independent organizations meeting conjointly, and outstanding scientific and technical exhibits, will be available—still in step with progress.

ALL white members of the Kansas Medical Society are cordially invited to be the guests of the Southern Medical Association at the meeting in St. Louis. Attending guests will be accorded every privilege, scientific and social, that members enjoy with the exception of voting in the general session. NO registration fee. To secure a program for the St. Louis Meeting, write to

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close on Thursday, November 13; a clinical program, presented by St. Louis physicians, will commence on Monday afternoon and will be concluded at noon on Tuesday; commencing on Tuesday afternoon, the nineteen sections of the Association and three conjoint societies will hold meetings; fraternity luncheons, alumni reunions, a public meeting and a hobby show will also be presented. The scientific sessions and the technical and the scientific exhibits will be located at the St. Louis Municipal Auditorium.

Kansas members will not be required to pay a registration fee for attendance at the meeting.

Copies of the program were forwarded to all Kansas physicians on October 19. Hotel reservations may be made through Dr. J. Hoy Sanford, 910 Syndicate Trust Building, St. Louis, Missouri.

REHABILITATION PROGRAM

The following telegram was received by the State Director of Selective Service at Topeka on October 10:

"The President of the United States will announce today that the selective service system has been charged with the administration of a program for the rehabilitation of rejected men between the ages of twenty-one and twenty-eight found by the Army to have remediable defects and who as a result of such treatment will be made available for general military service. The remedy will be provided by physicians and dentists of the locality in which the registrant resides and compensation will be paid from federal funds to be made available for such purpose. More detailed information concerning the plan will be sent at the earliest opportunity."

HOSPITAL ASSOCIATION

The next annual meeting of the Kansas State Hospital Association is to be held in Topeka on November 12-13, 1941.

In addition to numerous discussions of hospital and medical interest, the program will include discussion of plans for instituting a group hospital plan in Kansas, under the enabling act therefor passed in the last session of the Legislature.

All members of the Society are invited to attend the meeting.

COMMITTEES

The following Society committees have held recent meetings: The Committee on Maternal Welfare, at Wichita on September 21; the Committee on Automobile Accidents and Fractures, at Newton on September 28; the Committee on Medical Schools, at Kansas City on October 8.

The Committee on Child Welfare and the Committee on Control of Cancer plan to meet in Topeka on October 23 and 26, respectively.

Minutes of the above meetings will be published in the next issue of the Journal.

SECRETARIES CONFERENCE

The annual conference of secretaries and editors of state medical societies, sponsored by the American Medical Association, is to be held in the Association Headquarters in Chicago on November 14-15.

The official program for the meeting has not as yet

been announced but discussions pertaining to selective service, national defense, and other matters of current interest are to be presented at the conference.

Kansas will be represented at the meeting by Dr. Clyde D. Blake of Hays, President; Dr. John M. Porter of Concordia, Secretary; Dr. W. M. Mills of Topeka, Editor of the Journal, and Dr. L. R. Pyle of Topeka, Dr. L. E. Eckles and Dr. R. B. Stewart of Topeka, Associate Editors. All members desiring to attend the meeting are invited to do so.

STATE MEETING

Various committees of the Sedgwick County Medical Society are engaged in completing arrangements for the 1942 annual meeting of the Society, which is to be held in Wichita on May 11-14.

The meeting will be held at the Wichita Forum and the floor plan and the general arrangements of the building will be similar to the meeting held in that city during 1940.

Several innovations are being planned in the program for this year. Among these are the following: with the exception of the eye, ear, nose and throat section meeting, no section meetings will be scheduled and all scientific presentations are to be given at general assemblies; the various meetings will commence at 10:00 a.m. each day instead of at 8:30 a.m. as in the past, in order to provide additional time for viewing exhibits; a question-and-answer seminar on matters of practical interest is being arranged; the round table luncheons will consist of informal discussions on selected topics by the physicians in attendance.

Several county medical societies adjacent to Sedgwick County are assisting the arrangements and preparations for the meeting.

HEARING WEEK

Governor Payne H. Ratner has designated the week of October 19-25 as Kansas Hearing Week, which is in conjunction with National Hearing Week, to be held at the same time. The object of the week is to promote interest and assistance in conservation of hearing and prevention of deafness.

The American Society for the Hard of Hearing, which is the official sponsor of the above week and which is particularly active in the field of prevention and control of deafness, has one of its local chapters located in this state. This chapter is the Wichita Society for the Hard of Hearing, Inc., which was organized in 1928 with an original membership of thirteen and which was the forty-fourth local chapter of the national organization.

Since that time the Wichita society has grown steadily and now has an active membership of over fifty and an affiliated membership of twice that number.

Its primary goal has been closely related to that of the parent body and consist; first, in the prevention of deafness; and secondly, in the rehabilitation and adjustment of the deaf. A major object this year will be the furtherance of hearing through the promotion of a state law which will provide for compulsory hearing tests for every child in every school and an adequate follow-up program designed to encourage early medical attention and lip reading classes for those for whom such seems advisable.

In the field of adult adjustment, the Wichita society has encouraged the installation of group hearing aids in churches and theatres, and fifteen churches and two theatres

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 DR. HOWARD T. KARSNER, Pathology, Cleveland, Professor of Pathology and Director of Institute of Pathology, Western Reserve University.
 DR. FRANCIS E. LEJEUNE, Otolaryngology, New Orleans; Professor of Otolaryngology and Head of Department of Otolaryngology, Tulane University Medical School.
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 DR. ALTON OCHSNER, General Surgery, New Orleans, Professor of Surgery and Head of Dept. of Surgery, Tulane University Medical School.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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in Wichita are now equipped with these facilities. The organization maintains its own group hearing aid, which it lends out on occasion, and which is available for the use of the members in the society's headquarters in Wichita.

The members meet every Monday evening for social and business sessions, and free lip reading classes are held in conjunction with these meetings on alternate Mondays.

Co-operating with the Medical Bureau of the Sedgwick County Medical Society, the organization devotes all available funds to defray the expenses of tonsillectomies performed on school children threatened with deafness.

Through the donation of the Western Electric Company and the Audiphone Company of Wichita, the society, in co-operation with the Medical Bureau, placed over \$400 worth of hearing aid equipment in deserving hands this year. On occasion, its members lend their co-operation to other welfare agencies when problems concerning the hard-of-hearing arise.

NUTRITIONAL CONFERENCE

The first annual conference of the Kansas State Committee on Nutrition in Relation to National Defense was held in Topeka on October 17-18.

The principal speaker was Dr. Russell M. Wilder of the Mayo Clinic of Rochester, Minn., who is also chairman of the Committee on Foods and Nutrition of the National Research Council.

Members of the Society who appeared on the program are as follows: Dr. C. D. Blake of Hays, Dr. H. R. Ross of Topeka, Dr. J. W. Spearing of Columbus, Dr. Ralph I. Canuteson of Lawrence, Dr. M. W. Husband of Manhattan, Dr. R. B. Michner of Wichita, Dr. B. I. Krehbiel of Topeka and Dr. W. H. Algie of Kansas City.

HOSPITALS IN DEFENSE AREAS

Several Kansas counties, wherein national defense projects are being constructed, have filed applications, under a measure recently passed by Congress, for funds to construct hospitals or to provide additional hospital facilities in these counties.

The measure referred to is H. R. 4545, under which cities or counties having national defense needs may receive federal subsidy for the construction of hospitals, other public buildings and other facilities. Under the bill, the total cost of the facility may be obtained from the federal government with the understanding that the local agency will be responsible for operation and future maintenance.

HEART COURSE

The annual postgraduate course on heart disease sponsored by the Society Committee on Control of Heart Disease and the Kansas Heart Association was held in Emporia on September 29 to October 2. The speaker for the course was Dr. Tinsley Randolph Harrison, Professor of Medicine of the Bowman-Gray School of Medicine, Wake Forest College of Winston-Salem, North Carolina.

Physicians who registered for the course are as follows: Dr. G. M. Edmonds of Horton, Dr. W. C. Schwartz of Manhattan, Dr. James Stewart of Topeka, Dr. W. G. Weston of Arkansas City, Dr. B. M. Marshall of Topeka, Dr. R. G. Carter of Independence, Dr. H. T. Morris of Topeka, Dr. Porter M. Clark of Independence, Dr. Fred J. McEwen of

Wichita, Dr. Earl L. Mills of Wichita, Dr. J. W. Hertzler of Newton, Dr. H. H. Jones of Winfield, Dr. A. Boese of Coffeyville, Dr. F. Steffen of El Dorado, Dr. C. W. Erickson of Pittsburg, Dr. F. A. Trump of Ottawa, Dr. W. A. Parrish of Mulberry, Dr. R. W. Fernie of Hutchinson, Dr. W. H. Algie of Kansas City, Dr. G. A. Chickering of Hutchinson, Dr. C. M. Barnes of Seneca, Dr. C. W. Plowman of Jewell, Mr. Maurice Snyder of Salina, Dr. T. L. Haslam of Council Grove, Dr. J. A. Butin of Chanute, Dr. A. C. Eitzen of Hillsboro, Dr. F. A. Moorhead of Neodesha, Dr. L. O. E. Peckenschneider of Halstead, Dr. Philip Morgan of Emporia, Dr. C. C. Underwood of Emporia and Dr. F. J. Eckdall of Emporia.

NEW LICENSEES

The Kansas State Board of Medical Registration and Examination met in special session in Kansas City on September 23-24, 1941. Licenses were granted to twenty-three doctors, fourteen by examination and nine by reciprocity. The following is the list of those who met the requirements of the Board:

James L. Beaver.....	Kansas City
Leslie J. Brethour.....	Junction City
Anthony B. Busch.....	Dodge City
Louis Cohen	Topeka
Edward D. Funk.....	Topeka
John H. Gilbert.....	Kansas City
William G. Gordon.....	Kansas City
Harold L. Graber.....	Topeka
Emmett R. Johnson.....	Topeka
LeRoy V. Kaufman.....	Wichita
Stanley G. Laing.....	Overland Park
Lawrence E. Leigh.....	Lawrence
Charles T. McCoy.....	Kansas City
Glenn E. Millard.....	Topeka
Ezra L. Petry.....	Kansas City, Mo.
Alfred F. Schmidt.....	Canton
Edward H. Stratemeier, Jr.....	Kansas City, Mo.
Kay Toma	Wichita
William H. Tyler.....	Kansas City
Leo F. Wallace.....	Topeka
Fred L. Wommack.....	Overland Park
Robert L. Worthington.....	Topeka
Saul Zizmor	Wichita

The next regular meeting of the Board will be held at the Kansan Hotel in Topeka on December 9-10, 1941.

LAND USE COMMITTEE

The Society has recently been asked to become a member of the Kansas State Committee on Land Use which is composed of representative farmers and farm organizations, and which is preparing various recommendations and studies of interest to farmers.

One section of the committee work will be devoted to farm health problems and a sub-committee has been appointed for that purpose composed of: Mr. L. J. Hoover, Chairman; Mr. Mott L. Robinson, Secretary; Mr. John Voran, Mr. Charles A. Lash, Mr. Felix Edmisson, Mr. H. J. Seidel, Mr. Ed Starry, Miss Martina Bogerd, Mrs. Logan Leonard, Mrs. Howard Fry, Mr. Randall Hill, Mr. Glenn Long, Miss Georgiana Smurthwaite, Miss Gertrude Allen, Miss Florence McKinney, Dr. Martha S. Pittman, Mr. Richard Cole, Prof. L. P. Washburn, Miss Mary Fletcher, Dr. Paul Ensign, Dr. H. R. Ross and Mr. C. G. Munns.

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MEDICINE—Two Weeks Intensive Course in Internal Medicine, and Two Weeks Course in Gastro-Enterology will be offered twice during the year 1942, dates to be announced. One Month Course in Electrocardiography and Heart Disease every month, except December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Informal Course available every week.

GYNECOLOGY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Twenty Hour Personal Course in Vaginal Approach to Pelvic Surgery November 3rd. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Clinical and Special Courses starting every week.

OPHTHALMOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

ROENTGENOLOGY—Courses in X-ray Interpretation, Fluoroscopy, Deep X-ray Therapy every week.

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The above sub-committee met in Manhattan on August 28-29 in conjunction with the meeting of the entire committee and prepared the following report which was adopted by the general committee:

"A. Housing in Relation to Health.

We recommend that:

1. The Water Facilities Program be extended to cover the entire state inasmuch as an adequate supply of pure water is an important factor in promoting good health, comfort and efficiency.

2. The State Board of Health provide each county planning committee with a portfolio on farm sanitation including data on sewage disposal and construction and maintenance of wells.

3. That the Farm Security Administration representative of this committee submit plans used in other states for setting up work centers where farmers can use the equipment for making and repairing furniture and also make suitable equipment available to encourage more farm building work on a self-help basis. The report should be submitted at the next meeting of this committee so that the feasibility of such plans may be considered for Kansas.

4. County planning committees report on the availability of local materials which can be utilized for building. Kinds and amounts should be reported. The Extension Architect should provide the forms to be used for this purpose.

B. Recreation in Relation to Health.

We recommend that:

1. Recreational facilities in one county in each of the three Extension areas be studied. The Extension specialist in Recreation is to serve as chairman of the sponsoring committee consisting of representatives from the Physical Education Department, Department of Economics and Sociology, Extension Division, State Health Department, Work Projects Administration, National Youth Administration, State Board of Education and the Bureau of Agricultural Economics. This committee should study all surveys relative to recreation which have been made to date and thereby avoid duplication of effort. They should decide on technique and determine how the study is to be conducted.

2. The Extension specialist in Recreation promote a recreational program in one county in each of the Extension areas.

C. Preventive Medicine in Relation to Health.

We recommend:

1. To the United States Army Medical Corps, Seventh Corps Area, Omaha, Nebraska, that due to the need of medical facilities in many areas in Kansas, doctors of medicine who practice in such areas be deferred or in cases of reserve officers that they have the privilege of resigning. A map showing medical facilities should be submitted with this letter.

2. That each county committee study the plans and arrangements utilized in their counties for the provision of indigent medical care, that assistance be provided in acquainting county boards of social welfare with the importance of having complete and workable plans for this purpose, and that in areas where additional physicians are deemed to be needed particular study and effort be devoted to this subject.

3. That the State Medical Society locate doctors for communities where they are needed and that their representative serve as liaison between the land use committee on health and the medical societies.

4. That The Kansas Medical Society look into the mileage charges for medical services.

5. That an invitation be extended to John Stone, President of the Kansas Hospital Association, Topeka, Kansas, to have their representative attend the next State Land Use Planning Meeting to explain their group hospitalization plan.

6. That organized county groups such as home demonstration units be encouraged to experiment with special plans for medical attention such as a plan for annual physical examinations for their membership. This plan should be worked out cooperatively with the county medical society and a committee of farm women.

7. That county home demonstration groups and 4-H Clubs make the study of health an important part of their programs.

8. That the Extension specialists in Home Health and Sanitation extend that project to include more information on preventive medicine in relation to health. This might be done by listing Kodachrome slide, movie film and other illustrative material on this subject and encouraging their use in 4-H and home demonstration group meetings.

9. To the Superintendent of Public Instruction that public and private schools incorporate health as a major subject in their curriculum.

10. That the Secretary of the State Dental Association be invited to serve in an advisory capacity on this committee.

D. Food in relation to Health.

We recommend that a committee consisting of a representative from the Farm Security Administration, Extension Service, National Farm Loan Association and Bankers Association consider the present recommendations for a standard farm production food budget for a farm family and make recommendations as to a plan that will be used by all agencies."

The next meeting of the general committee and the sub-committee will be held at Manhattan during November.

QUIVERA MEDICAL HISTORY CLUB AS HOST

The American Association of the History of Medicine will hold its next semi-annual meeting in Kansas City on October 24-25. The meeting will be held at the Hixon Laboratory for Medical Research, at the University of Kansas School of Medicine and will be presented under the auspices of the Quivera Medical History Club of Kansas City.

The Quivera Medical History Club extends to members of the medical and dental professions and any one engaged in scientific work an invitation to attend the meeting. Inquiries or other communications should be addressed to Dr. Logan Clendening, 1247 West Fifty-sixth Street, Kansas City, Missouri.

LEGAL MEDICINE

An interesting committee activity this year is the appointment of the new Committee on Legal Medicine which will serve jointly with a similar committee appointed by the Kansas Bar Association.

It is planned that the joint committee will study and prepare recommendations on various matters of mutual interest to both the legal and medical professions.

The members of the Bar Association committee are: Mr. Claude I. Depew of Wichita, Chairman, Mr. Roy C.

BUSINESS NOT AS USUAL?

When the "All-Out" defense program was announced, few persons anticipated how widespread the scope of its influence on business would be. For a time business-as-usual seemed the order of the day—and of days to come.

Then orders started to flow from defense offices, plants were built, materials began to go into army and navy supplies, and labor became busy with defense work. More and more apparent became the fact that business was not to be usual. Almost no firm was too large or too small to escape adjustments, no town too remote to see changes made.

Even though they were more than willing to carry their share of America's new task, many business men were surprised at the nature of the sacrifices which appeared. Factories found tools and materials scarce. Storekeepers saw their shelves grow bare of hard-to-get merchandise. Workers migrated to defense centers. Labor scarcity appeared in some communities, unemployment occurred in others. Such a tremendous change was inevitably accompanied by hardship, and in some instances, unnecessary business dislocation caused by a lack of information or tardy realization of what was happening. While defense needs must come first during the present emergency, nothing could sabotage the defense program more quickly than a demoralization of American business. Therefore, certain provisions have been made to alleviate as much business hardship as possible. These provisions will not save all businesses, but they should be thoroughly investigated by every firm feeling the pinch of scarcities.

This commission, deeply concerned about the future of Kansas Industry, is devoting constant study to the problem of preserving Kansas business during this crisis. The staff is in daily contact with defense officials and familiar with many avenues of change open to the firm that finds business is not as usual. We invite requests for information and counsel from those who are confronted with such problems.

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KANSAS

Davis of Hutchinson, Mr. John H. Hunt of Topeka, Mr. Oscar P. May of Atchison, Mr. LaRue Royce of Salina and Mr. Thomas M. VanCleave of Kansas City.

The members of the Society committee are: Dr. Earl L. Mills of Wichita, Dr. Clyde D. Blake of Hays, Dr. E. J. Bribach of Atchison, Dr. J. J. Brownlee of Hutchinson, Dr. J. L. Lattimore of Topeka, and Dr. L. S. Nelson of Salina.

ALUMNI MEETING

The annual meeting of the Alumni Association of the University of Kansas School of Medicine was held on October 8, at Kansas City. The program, which was sponsored by the 1921 class, included Chancellor Deane Mallott of Lawrence, Dr. Logan Clendening, Dean H. R. Wahl and Mr. J. A. Ennis of Kansas City as speakers, a movie showing former and present views of the members of the class of 1921 and a presentation of caricatures of members of the faculty.

In an election of officers to serve during the next year, Dr. F. C. Helwig of Kansas City, Missouri, was elected as president; Dr. James Grauerholz of Kansas City, Missouri, was elected as vice-president; and Dr. Lee H. Leger of Kansas City was elected as secretary-treasurer.

The possibility of constructing a union building and student dormitory at the medical school, under an enabling act passed at the last session of the Legislature, providing for the construction of such buildings at state schools, was discussed, and the members in attendance were asked to assist in obtaining financial assistance for this purpose. The class of 1921 announced that it was making a contribution of \$100 at the meeting. Dr. Fred McEwen of Wichita and Dr. Porter Clark of Independence were elected as representatives of the Alumni Association to the Board of Directions of the University of Kansas School of Medicine Building Association.

BUNDLES FOR BRITAIN

Dr. R. I. Canuteson of Lawrence, who has been appointed by Dr. C. D. Blake, President, to co-ordinate on behalf of the Society, the medical aspects of the Kansas Bundles for Britain program, has asked that the following letter received by Mrs. Henry Werner of Lawrence, chairman of the organization for this state, be published:

"Great Britain's need for surgical instruments has vastly increased in the past few weeks.

Hospitals, already overcrowded with the torn victims of Nazi bombing, require a large uninterrupted supply of such equipment.

Added to this now is a new need. Great Britain is bracing for renewed and more violent bombings as winter fogs approach. In making ready for these the British and their Allies also prepare to take the offensive. All of this will mean continued bombings of civilian hospitals and military dressing stations operating under fire. These impending events make more necessary than ever the continued supply of surgical instruments.

We urgently ask you to appeal to all the doctors, surgeons and hospitals in your community to contribute their surplus surgical instruments so that we may send them without delay to England.

Please do it NOW! Form a committee of the leading doctors of your city to aid you with the appeal. Publicize the need in your newspapers and over your radio stations.

Get your volunteers to collect the contributions so they can be sent immediately.

Don't hold back the instruments until your campaign is over. Send them as they are received to our warehouse, 112 West Eighty-ninth Street, New York, so that we may start shipment to England at once! Help relieve the inevitable pain that is the price of our common VICTORY!

Yours sincerely,

The Dutches of Leinster,

Executive Chairman.

Dr. Canuteson has also stated that either Mrs. Werner or himself will be happy to forward to the New York office of the organization any surgical instruments which Kansas physicians desire to donate for this program. Such instruments may be forwarded to Mrs. Werner at 937 Ohio Street, or to Dr. Canuteson at the Watkins Memorial Hospital, both in Lawrence.

MEMBERS

Dr. E. R. Beiderwell, formerly of Belleville, is now located in Garden City.

Dr. Wray Enders of Lawrence was recently appointed as school physician of Lawrence, following the resignation of Dr. A. J. Anderson who has served in that capacity for thirty-five years.

An abstract of the article "Thymic Death" by Dr. C. Alexander Hellwig of Wichita, which was published in the June issue of the Journal, was published in the September issue of Southern Medicine and Surgery.

Dr. Arthur E. Hertzler of Halstead is the author of a new book entitled "Diseases of the Thyroid Gland," published by the Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers of New York.

Dr. E. M. Ireland, who practiced in Coates for many years and who until recently has served as a physician in a C.C.C. Camp, has moved to Lakin. Dr. Ireland will practice in the offices formerly occupied by Dr. G. R. Hastings, who has moved to Garden City.

The article "Treatment of Cerebral Palsy (Spastic Paralysis)" by Dr. M. E. Pusitz of Topeka, which was published in the February issue of the Journal was abstracted in a recent issue of the Journal of Mental Diseases.

Dr. M. L. Whitney, formerly of Axtel, has moved to Okemah, Okla.

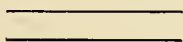
At the joint meeting of the Kansas Public Health Association and the Kansas Tuberculosis and Health Association held in Emporia on September 17-18 the following members of the Society appeared as speakers on the program: Dr. H. H. Asher of Wichita, Dr. C. H. Lerrigo of Topeka, Dr. C. E. Coburn of Kansas City, Dr. C. H. Munger of Emporia, Dr. F. C. Beelman of Topeka, Dr. F. A. Trump of Ottawa, Dr. P. W. Morgan of Emporia and Dr. C. F. Taylor of Norton.

Several members of the class of 1903 and former faculty members of the old Kansas City Medical College held

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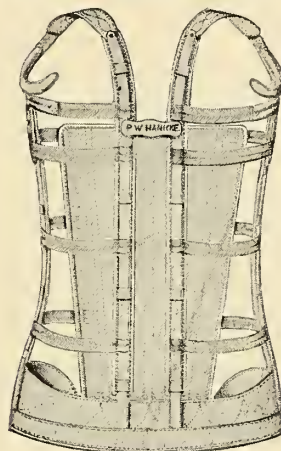
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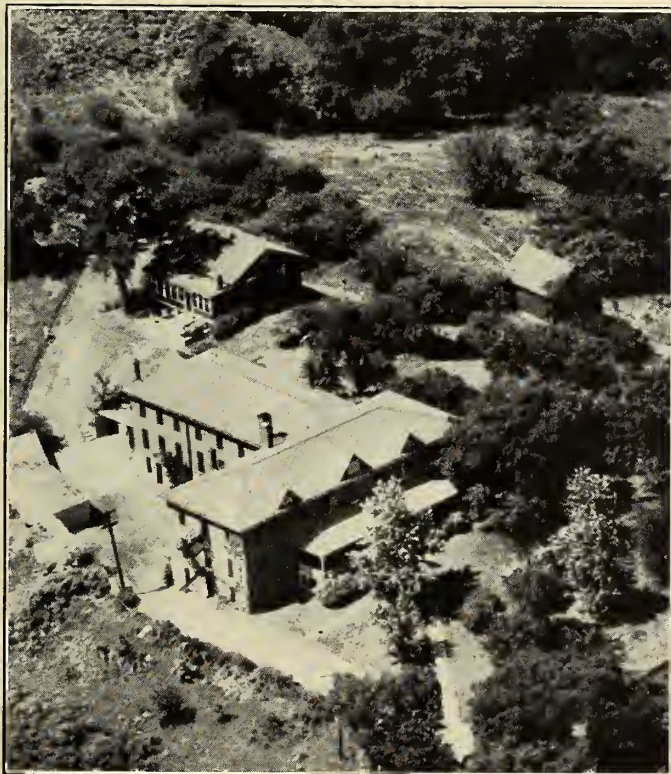
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a reunion at the Milnar Hotel in Kansas City on September 28. Members of the Society who attended are as follows: Dr. Geo. M. Gray of Kansas City, Dr. L. F. Barney of Kansas City, Dr. James G. Lee of Bonner Springs, Dr. R. C. Smith of Marion, Dr. Asa M. Townsden of Jamestown and Dr. C. C. Nesselrode of Kansas City.

COUNTY SOCIETIES

The Central Kansas Medical Society held its quarterly meeting at Russell on September 18. Speakers were: Lt. Col. Seth A. Hammel of Topeka, State Medical Director of Selective Service, who spoke on "Medical Aspects of the Draft"; Dr. Arthur Gray of Topeka who spoke on "New Development in the Use of the Sulfanomides in Genito-Urinary Diseases" and Dr. Robert H. Riedel of Topeka head of the Division of Venereal Disease of the State Board of Health, who spoke on "The Public Health Aspects of Venereal Disease."

The Cowley County Medical Society held a joint meeting with the St. Mary's Hospital staff in Winfield on September 18. Dr. Wendell Grosjean presented a survey of cancer cases treated in the Winfield hospitals. The following officers were elected for the new year: Dr. H. E. Snyder of Winfield as President; Dr. H. A. Mercer of Arkansas City as Vice-President; Dr. Wendell Grosjean of Winfield as Secretary.

At a meeting of the Ottawa County Medical Society held in Minneapolis on September 15, the following new officers were elected: Dr. L. M. Hinshaw of Bennington as President; Dr. F. E. Harvey of Minneapolis as Secretary; Dr. E. J. Haerle of Minneapolis as Treasurer.

The Pratt County Medical Society was host to the Reno County Medical Society at a meeting held in Pratt on September 26. Guest speakers were: Dr. E. D. Ebricht of Wichita and Mr. Martin Dupray of Hutchinson.

The Sedgwick County Medical Society held a symposium on Nephritis on October 7 at Wichita. Dr. Vincent Scott of Wichita discussed "Acute Nephritis," Dr. Henry N. Tihen of Wichita spoke on "Chronic Nephritis and Hypertension" and Dr. Lyman C. Murphy of Wichita spoke on "Pathological, Laboratory Findings in Nephritis." The next meeting of the society will be held on October 21, at which the speaker will be Dr. Brian Blades of St. Louis, Missouri.

The Shawnee County Medical Society held a dinner meeting in Topeka on October 6. Mr. Strong Hinman, physical director of the Topeka public schools, spoke on "Policies of Health Service in the Public Schools."

The Southeast Kansas Medical Society held a meeting at Fredonia on September 26. Dr. L. F. Barney of Kansas City spoke on "Modern Concept of Wounds and Their Treatment"; Dr. James B. Weaver of Kansas City, Missouri, spoke on "The Treatment of Osteomyelitis" and Dr. Lee H. Leger of Kansas City spoke on "The Use of Sulfanamide Drugs."

The Sumner County Medical Society held its first fall meeting at Wellington on September 18. Dr. J. A. Philipsen of Wellington was elected as Secretary of the society to fill the unexpired term of Dr. R. D. VanDeventer, who

has reported for Army service. A round table discussion of sulfanamide drugs was held.

The Washington County Medical Society held its first fall meeting in Hanover on September 9.

The Wyandotte County Medical Society will hold a joint meeting with the members of the Kansas City Southwest Clinical Society and the Jackson County Medical Society on October 21, at the Little Theatre of the Municipal Auditorium, Kansas City, Missouri.

The members of the Lyon County Medical Society were hosts at a dinner in Emporia on September 30, honoring Dr. Tinsley Randolph Harrison, of the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina, was the instructor in the postgraduate course on Study of Heart Disease.

DEATH NOTICE

Dr. Harrison B. Talbot, 53 years of age, died on September 30, in St. Francis Hospital, Topeka. Dr. Talbot was born on February 22, 1888, in Ford County, Missouri. He was graduated from the Kansas Medical College, Topeka, in 1913 and was a member of the Shawnee County Medical Society.

KANSAS MEDICAL ASSISTANTS

The Cowley County Medical Assistants Society held a meeting at Winfield on September 12. Miss Margaret Parrott of Wichita spoke on "Progress of the Medical Assistants Society." Guests were: Miss Katherin Fleetwood of Wichita and Mrs. Thelma Glebach of Wichita. The next meeting will be held in Arkansas City on October 10.

The Reno County Medical Assistants Society held a meeting on September 9 in Hutchinson. Dr. Gordon E. Stone of Hutchinson spoke on "Psychiatry." Mrs. Robert Bullard was elected as vice-president to succeed Mrs. Fay Gash, who has removed to El Dorado. The next meeting will be held on October 13.

The Sedgwick County Medical Assistants Society and the Cowley County Medical Assistants Society held a joint meeting in Wichita on September 25. Speakers were: Dr. C. T. Moran of Arkansas City who spoke on "Strabismus"; Dr. Martin Palmer of Wichita who spoke on "Correction of Speech Defects" and Dr. Howard Snyder of Winfield who discussed "Cancer Control."

The first fall meeting of the Topeka Physicians Assistants Society was held in Topeka on September 8. Dr. Vernon C. Wiksten of Topeka spoke on "Allergies." A second meeting of the organization was held on October 6, in the Arts and Crafts building of the Menninger Clinic. Speakers were Miss Myrl Anderson and Mr. James Mower of the Occupational Therapy Department, and members of the group employed at the Menninger Clinic were hostesses.

The Wyandotte County Medical Assistants Club resumed its regular monthly meetings with the first meeting held at the Chamber of Commerce rooms in Kansas City on September 22. The program committee of the club sponsored a fashioned show which was conducted through the courtesy of the Kay Cotton Shop. The next meeting will be held in Kansas City on October 27.



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AUXILIARY

PRESIDENT'S MESSAGE

The Central Kansas Medical Auxiliary and your President deem it a privilege and a joy to have entertained the state board at the annual fall meeting in Wakeeney on September 23. Twenty members answered to roll call, even though many drove over one hundred miles that morning. The interest and enthusiasm of the board indicates a good constructive year for the Auxiliary.

All officers, chairmen and local presidents presented their plans for the year and all stressed the great need for more prompt replies to their letters, especially from local presidents. If we have a constructive year we must have co-operation; only in united efforts can we develop growth and strength.

Auxiliaries will soon be receiving their new year books and your Press and Public Relations Chairman regrets so much that five auxiliaries will be listed the same as last year. In spite of repeated calls for corrected lists of officers, chairmen and members, these were not received. As soon as we receive these lists and when space permits they will be printed either in the Newsletter or in the Journal of The Kansas Medical Society.

Nutrition has been declared the second line of defense. Our National Auxiliary urges us to make this subject a major project in our programs. The doctors' wives should be well informed in this and well prepared to present it whenever the opportunity permits. Our public relations chairmen can do a great deal toward developing a vital interest in the study of nutrition.

We want again, to urge the program committees to keep in close contact with their State Chairman of Program, Mrs. Regier. She is well prepared to assist in program plans and developments. Let us all keep abreast of the times regarding those questions which are of such vital

and necessary interest to the medical profession and to their families.

We, your officers, are happy for the interest and co-operation shown by the board members; we again wish you all a year of constructive work, also a year of many new friendships gained and many happy hours together. We all realize that the road to friendship is only through understanding. Let us foster the desire for understanding and tolerance with one another.

Sincerely,

Mrs. W. Y. Herrick.

The Fall Board meeting of the Woman's Auxiliary to the American Medical Association will be held in Chicago at the Palmer House, on November 14 at 9:00 a.m. Our President, Mrs. W. Y. Herrick is planning to attend.

We regret to hear of the illness of Mrs. C. F. Taylor of Norton, since her attendance at the Board meeting at Wakeeney. Dr. and Mrs. Norton's son has also been ill and unable to return to college, we wish them both a speedy recovery.

Dr. and Mrs. L. A. Curry have returned from a trip to New Orleans and the Southern states. Dr. Curry attended the meeting of the Central Association of Obstetricians and Gynecologists held at New Orleans.

Dr. and Mrs. F. C. Beelman have returned from Ohio where Dr. Beelman has been attending the Mississippi Valley Tuberculosis Association meeting. Dr. Beelman presented a paper on tuberculosis.

LABETTE COUNTY AUXILIARY

The first fall meeting of the Labette County Auxiliary was held at the home of Mrs. L. A. Proctor, in Parsons. Mrs. Charles Miller, president, presided during the business session. Mrs. R. W. Urie presented a review on the National Bulletin and Mrs. N. C. Morrow gave a paper on "Nutrition for Defense."

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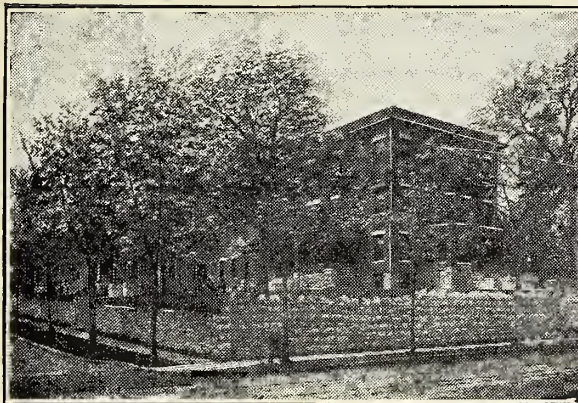
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THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

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Volume XLII

NOVEMBER, 1941

Number 11

CONFUSION IN DIFFERENTIATION OF HEART MURMURS AND SOUNDS*

Arthur L. Smith, M.D.

Lincoln, Nebraska

WHY AMPLIFY AND RECORD HEART SOUNDS?

There is nothing as fleeting or undependable as the human memory. Therefore, any method that can make permanent records of any essential bodily function, which at present can be preserved only by the human memory, should be welcomed by the medical profession.

For example, the examining physician's impression of the many peculiarities of heart sounds—normal or abnormal—cannot long be accurately retained. Therefore, if it is of clinical value to know the exact condition of these sounds at the time of examination, then of how much more value would it be if the heart sounds were recorded for future reproduction and comparison with later changes in the same heart? Also, if accurate knowledge of heart sounds is advisable, we should be prepared to collect this information by any devisable means.

While practice may increase the acuity of the ear, the prestige of all clinicians suffers greatly when their heart sound conclusions are compared with the accurate recordings of recently developed sensitive instruments.

We do not auscultate a heart to hear murmurs only but also to know the rate and type of rhythm or arrhythmia; intensity, duration and accentuation of the heart sounds; absence of one or both sounds; extra normal and abnormal sounds as, systolic clicks, mitral opening snaps, third and fourth sounds and reduplication of sounds; systolic, protodiastolic, presystolic, and summation gallop rhythm; duration of the systolic and diastolic silences; pericardial friction rubs; and differentiation of sounds from various types of murmurs which are of functional or organic

origin. The point of origin of heart sounds cannot always be accurately located by the area in which they are best heard on the surface of the chest. The combinations of these sounds are often so bewildering it is impossible to differentiate them without graphic registration and measurements or by amplification and disc recording.

Thus, to the detriment of the patient, confusion of sounds of harmless and pathologic origin results. However, these latter subjects cannot be dealt with in this article for it would be unduly prolonged.

The reasons (singly or combined) many heart sounds cannot be clearly heard by the unaided ear are: (1) the frequencies of the sounds are too low; (2) the energy liberated is too small; (3) the chest wall is too thick; (4) the heart rate is too fast; (5) noises inside or outside the chest are too great or (6) the human ear is not sensitive enough. The common stethoscope seems to be of little value in overcoming these difficulties.

Since most of us use a stethoscope there must be some reasons for so doing, such as: (1) the heart sounds are amplified and more clearly heard; (2) the examiner appears less awkward and more at ease than when listening with the unaided ear or (3) the physician wishes to make an impression on the laity with this "movie" symbol of medicine.

However, some believe the stethoscope and amplification of heart sounds are unnecessary and that the former reduces the efficiency of the ear, but they admit the accurate knowledge of heart sounds is of clinical value and the crystal microphone is free from distortion.

Since the discovery of the crystal microphone much advanced knowledge of heart sounds is possible by the following means: (1) the stethograph or phonocardiograph which makes permanent measurable records of heart sounds by means of photography or ink recordings (these are made by several companies in the United States); (2) the lag screen belt method, which was invented and made clinically useful by Asher and Hoecker,¹ visualizes heart sounds on a phosphorescent screen (this instrument is being widely used); (3) the cardiophone amplifies the heart sounds so they may be distinctly heard by the average ear through the loudspeaker or electrical

*Presented at the 82nd Annual Session of The Kansas State Medical Society, Topeka, May 13, 1941.

stethoscope and; (4) the cardiophonograph, which I have developed,²⁻³ accurately records the heart sounds and these may be reproduced at leisure at various rates, intensities and frequencies for careful analysis. These records (1 and 4), like electrocardiograms and roentgrams of the heart, can be preserved for future reference and comparison.

Fetal heart sounds have been recorded by the author⁴ in fifty-two cases and among these was one with a systolic murmur which was also found after delivery.

Since murmurs do not suddenly burst into full audible bloom without a budding stage, it is known the sub-audible murmurs can be discovered by these methods, treatment for the underlying lesion can be instituted earlier and a more favorable outcome should be expected.

DIFFERENTIATION OF MURMURS FROM OTHER HEART SOUNDS

Murmurs, as a rule, are of longer duration and greater frequency than other sounds originating in the heart.

The reduplicated first sounds are short and sharp and are usually of the same intensity and duration.

The systolic click is of short duration, it appears in varying parts of systole and is really a clicking sound.

The reduplicated second sounds vary in distance apart, but are of like characteristics.

The third sound, later in diastole, is dull, of low frequency and of low intensity.

The mitral snap appears only in mitral stenosis and its position in diastole is just anterior to that of the third sound.

The fourth sound (the auricular portion of the first sound) is found in diastole from just anterior to the first sound to any position following the second sound. It is usually softer than the two heart sounds.

Gallop rhythm, which resembles the gallop of a horse, is composed of the two heart sounds and either the third or fourth. These two latter may be superimposed. Oftentimes these sounds can be best heard near the point at which they originate but this does not always hold true.

Depending upon the skill of the examiner these sounds can often be differentiated but they can always be identified by means of the cardiac instruments already mentioned.

The differentiation of functional murmurs from those due to organic changes is not so easy. Most of the former are heard during systole and few during diastole. The functional is not usually referred very far from its point of origin, is softer and does not change the shape of the heart.

Diseases which produce these murmurs as, hyperthyroidism, anemia, nervousness, malnutrition, etc., can easily be discovered and when corrected the murmur disappears.

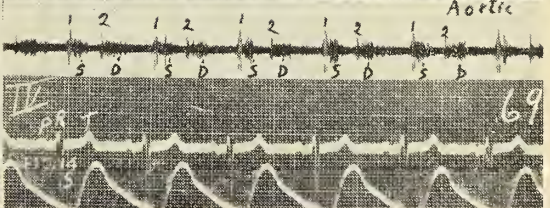
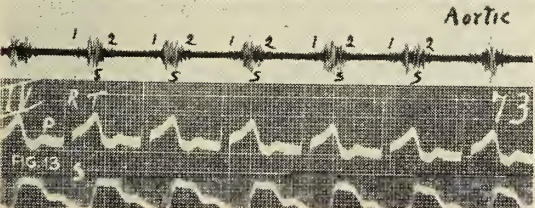
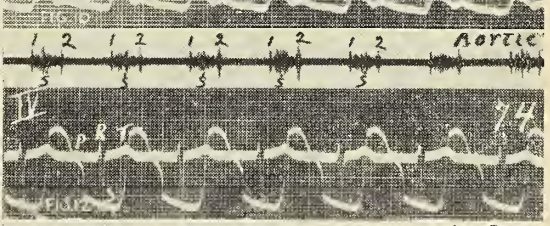
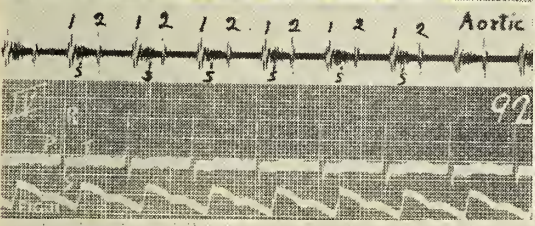
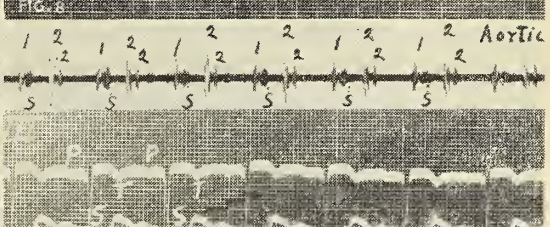
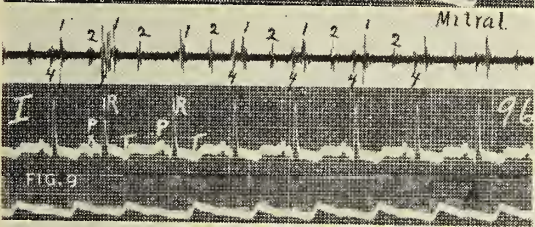
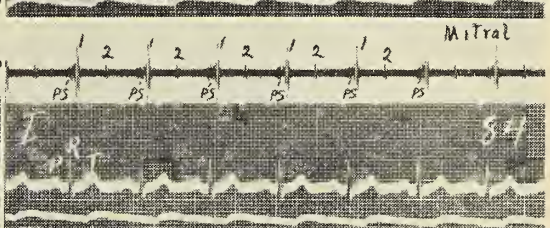
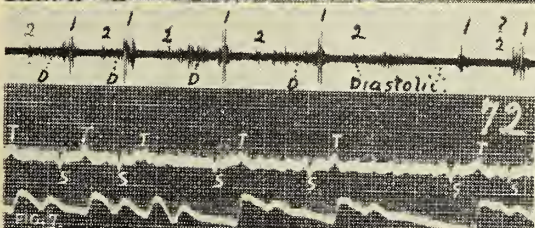
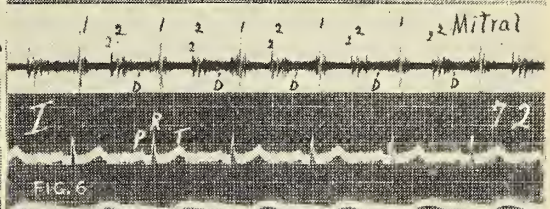
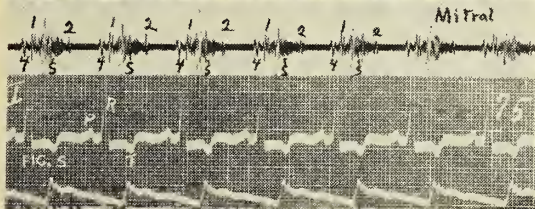
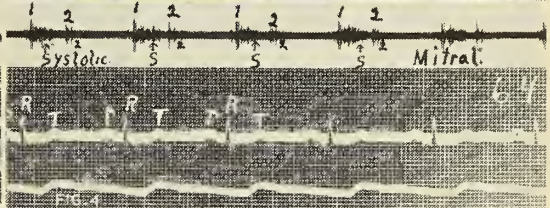
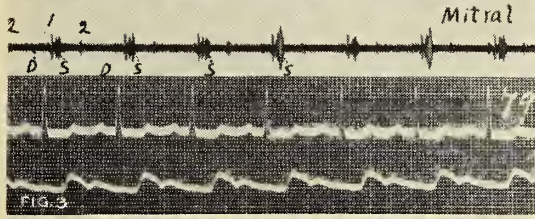
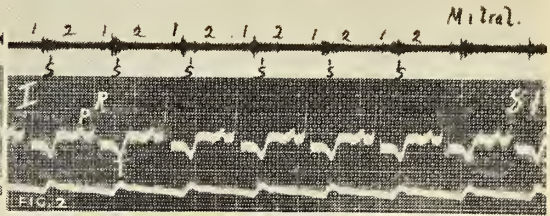
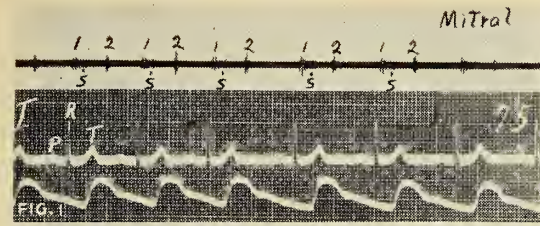
The murmur of organic origin in systole is usually coarse and louder and referred to greater distances. Those murmurs found in diastole are nearly always due to valve or valve ring changes and are usually soft. With valve destruction the heart will sooner or later assume a different shape—such as mitral or aortic configuration—depending upon the part which bears the increased amount of work.

ARE MURMURS A DISEASE?

The reason for discussing this subject today is with the hope of preventing; (1) the pernicious habit of condemning many who have functional heart murmurs to some form of unnecessary medication and instilling into their minds the unremovable fear of heart disease; (2) the mistake of calling extra heart sounds serious heart abnormalities, as third and fourth sounds, split first and second sounds, systolic clicks, many gallop rhythms, pericardial friction sounds, lung sounds, etc.; (3) the unnecessary retirement of many with actual valvular deformities to a life of invalidism and unproductiveness.

A murmur at no time is a disease but may be caused by a diseased valve which passed through its active course in childhood. Therefore, if we wish to see adult rheumatic heart disease in the making it is to the child we must go and carefully follow the destructive progress of an unknown organism after it invades the blood stream and sets up an inflammatory reaction in the small arterioles in various parts of the young body—a disease which we call rheumatic fever. When we think of rheumatic fever a picture of joint inflammation is the dominating

Fig. 1. Over mitral area. Functional murmur. Very short protosystolic (S) murmur. Fig. 2. Over mitral area. Mitral regurgitation. Systolic murmur (S) starts in mid systole, is louder at first and gradually decreases in intensity. Fig. 3. Over mitral area. Mitral regurgitation and stenosis. Protosystolic (S) murmur, loud and short. Soft diastolic (D) murmur. Fig. 4. Over mitral area. Mitral regurgitation. Systolic (S) murmur starts immediately after the first (1) sound and gradually decreases in intensity. Split second (2 2) sound. Fig. 5. Over mitral area. Mitral regurgitation. Fourth (4) sound. Loud systolic (S) murmur in the middle of systole which fades out before the second (2) sound. Fig. 6. Over mitral area. Mitral stenosis. Split second (2 2) sound. Diastolic (D) murmur, decreases and then increases in intensity. Fig. 7. Over mitral area. Mitral stenosis. Diastolic (D) murmur continues throughout diastole when this period is short, but fades out when it is longer. Auricular fibrillation. Fig. 8. Over mitral area. Mitral stenosis. Short presystolic (PS) murmur, crescendo in type. Fig. 9. Over mitral area. Fourth (4) sound which is often mistaken for a presystolic murmur. When auricular extrasystole (p/x) appears, the first sound is greatly widened. Fig. 10. Over aortic area. Aortic stenosis. Short protosystolic (S) murmur. Split second (2 2) sound. Fig. 11. Over aortic area. Aortic stenosis. Systolic (S) murmur, loud at first. Begins immediately after the first (1) sound and fades out before the second (2) sound. Fig. 12. Over aortic area. Aortic stenosis. Systolic (S) murmur, loudest in the mid systolic area. Fig. 13. Over aortic area. Aortic stenosis. Systolic (S) murmur, short period of silence after the first (1) sound, then very intense and fading out somewhat before the second (2) sound. Fig. 14. Over aortic area. Aortic stenosis and regurgitation. Murmur (S) in the first half of systole. The diastolic (D) murmur is louder in the first half and fades out before the first (1) sound.



symptom brought to our minds, but this is not true in children. In early life its affinity is for the heart, while in adults it usually attacks the joints. In children it often relapses, running a chronic course, and sooner or later the arterioles in the heart valves are affected.

Now is the time to attempt to cure this disease before destruction of the valves has taken place. The new "sulfon" group of drugs offers the best hope at the present time. It has been my good fortune in eight cases of rheumatic fever, three of streptococcus septicemia and four of staphylococcus septicemia (one of these with a severe knee joint infection and one with periostitis of the lower right femur and the left pubic bone) in which sulfanilamide, sulfapyradine or sulfathiazol was given to get a complete recovery with no permanent change in the endocardium or the myocardium. Perhaps these drugs are the answer to prevention of valvular deformities in at least some of these cases.

In adulthood valvular defects are usually the result of childhood rheumatic fever with later scarring deformity of the valves. Later in life, arteriosclerosis and syphilis begin their work of valvular destruction. With early intensive treatment, syphilis of the heart and aorta can usually be prevented but as to prevention of arteriosclerotic valvular heart disease, treatment is of little value.

CONFUSION OF NORMAL AND ABNORMAL HEART SOUNDS

Our problem is to know whether the unusual heart sounds we hear are due to: (1) organic change in the valves and what type of change it is—rheumatic, arteriosclerotic, hypertensive or syphilitic; (2) functional murmurs which are caused by many conditions outside the heart, as anemia; (3) sounds which are purely physiologic; (4) congenital lesions or (5) sounds outside the heart.

Group 1.—The murmur per se, of course, never needs any treatment, though dilating or cutting of the mitral ring in stenosis has been done and may in time become a practical method. The principal value of careful analysis in these cases is to discover the etiological factor and, if of value, to institute treatment at once. A diagnosis of heart disease must never be made on the murmur alone, yet this is usually the basis for such a conclusion. A presystolic murmur always points toward a progressive disease while a diastolic murmur often is caused by an organic lesion.

Group 2.—In this group the discovery of a murmur may be of great value in that it leads oftentimes to the cause, which when treated results in a normal heart and a normal body, as in anemia of the myocardium due to pernicious anemia. Other murmurs,

while of no importance, may remain during the life of the patient and thus can be disregarded. The great majority of systolic murmurs do not result from organic changes and any systolic murmur which only appears after exercise is of no special importance.

Those due to dilatation of the heart will disappear following proper treatment for heart failure.

Group 3.—Third and fourth sounds, reduplicated first and second sounds, broad sounds, systolic clicks and gallop rhythm may simulate the murmurs in Groups 1 and 2. Thus careful clinical examination reinforced by accurate sensitive instrumental methods must be employed, and the proper conclusions will result.

Group 4.—The murmurs due to congenital lesions are always accompanied by some change in the heart. The proper recognition of a patent ductus botalli (a double murmur above the pulmonic area) is important since its surgical cure has become a success.

Group 5.—Some of these are of pathologic import, as pericardial rub, while others are of no significance and can be differentiated from intracardiac sounds by proper timing.

POSITION OF MURMURS IN CARDIAC CYCLE

Intracardiac murmurs may occupy any part of systole, of diastole or may continue throughout the cardiac cycle. Not to be too technical, in diastole a murmur may be protodiastolic (early), mid diastolic, presystolic (just before systole) or holodiastolic (entire diastole), while in systole it may take one or more of these positions.

Add to this the type of murmur, its intensity, where located and where transmitted and its description is fairly complete. With some murmurs the direction of the blood current is not changed, while in regurgitations, some of the stream is reversed though in different parts of the cardiac cycle. In some congenital lesions, arterial and venous blood are mixed and the murmur may even be continuous. The extracardiac murmurs usually do not fit in any one part of the cardiac cycle. In the illustrations murmurs are shown from low to high intensity, of varying durations and in various positions in the cardiac cycle.

COMPENSATION AND DECOMPENSATION

The heart is compensated for all practical purposes if the person is able to carry on his usual activities without any special distress.

Breathlessness on ordinary effort is an early sign of heart muscle weakness, but no valve change need be considered as the cause. Next increased heart rate appears and then signs of circulatory failure—dyspnea, venous distention and general congestion—tell the story of the degree of heart failure. How-

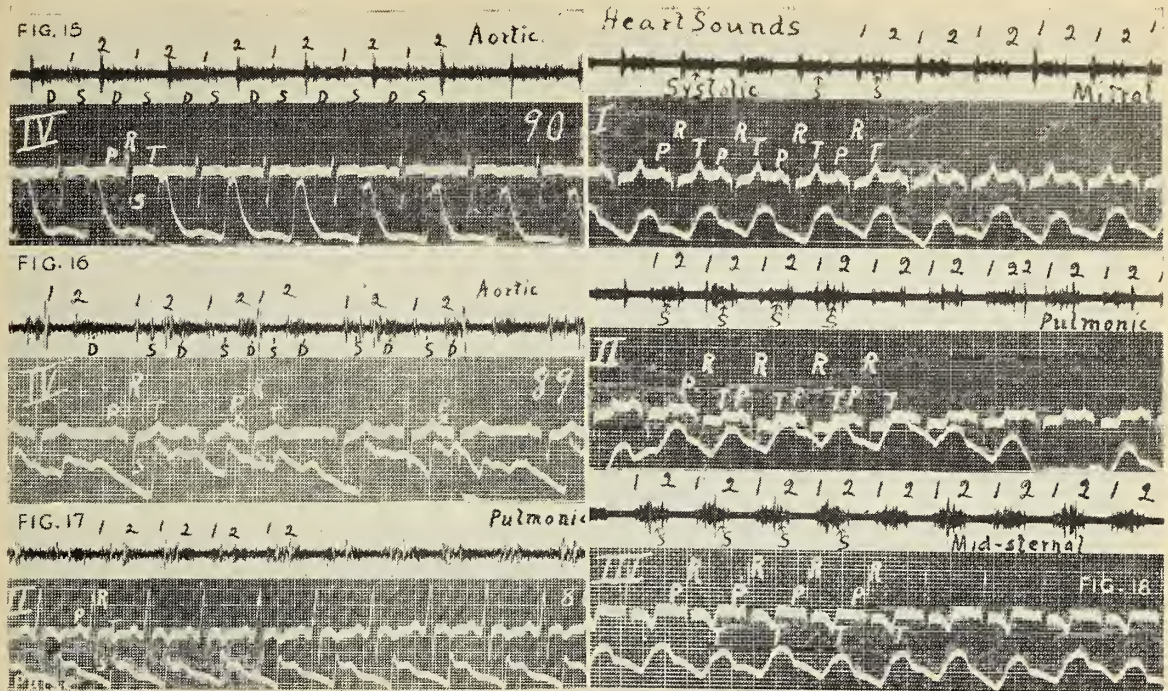


Fig. 15. Over aortic area. Aortic stenosis and regurgitation. Systolic murmur (S), soft and occupies the first half of systole. Diastolic (D) murmur, loud and of about the same intensity throughout diastole. Fig. 16. Over aortic area. Aortic stenosis and regurgitation. Systolic (S) murmur varies considerably but continues throughout systole. Diastolic (D) murmur is loud and continues throughout diastole. It is louder when diastole is short. Auricular extrasystole (p/x) decreases the preceding diastole. Fig. 17. Above pulmonic area. Patent ductus botalli. Murmur is continuous throughout systole and diastole. Fig. 18. Patent interventricular septum. A loud systolic (S) murmur is seen over the mitral, pulmonic and mid sternal areas. It is most intense in the latter position.

ever, at times in borderline cases the diagnosis can only be made by knowing the speed of the blood stream, the venous pressure, or by therapeutic tests as the administration of ouabain or digitalis.

TREATMENT

Chronic organic heart changes which cause murmurs need no treatment as long as the heart muscle is compensating normally. However, some clinicians give a maintenance dose of digitalis in these cases and believe this prevents cardiac hypertrophy. With this I cannot agree, for it has been shown digitalis has practically no effect on the normal heart muscle.

Many of these patients go through life without any treatment and their life expectancy is not decreased.

They should be allowed outdoor exercise within their work tolerance, such as, walking, swimming and cycling, for this generally builds up the strength of the heart muscle. If a healthy person with a normal heart is forbidden exercise he will develop heart symptoms when he is again allowed to exercise. So if this is true with a normal heart, how much more true it can be with a damaged heart.

They must be allowed to continue their regular work—especially professions, "white collar" jobs or any trades. In fact, the only injurious work is hard

physical exertion, running and other severe strains which might overtax the heart muscle. They should never be told they are especially handicapped for bad suggestion causes more physical and mental anguish than the disease itself. Occupation of mind and body is absolutely essential to prevent physical deterioration in those who have led a busy, active life. Tobacco, Coca-Cola and coffee should be forbidden because they increase the heart rate, make the patient conscious of the heart beat (palpitation) by increasing the irritability of the myocardium and also increase the general nervousness. The weight should be kept within the normal range by a well planned diet of proper caloric value.

Sedatives and suggestion may be necessary, especially after being informed; "he has a leaky heart." At such times it requires much time and patience to overcome the psychic damage done by the thoughtless physician. Even though heart disease may be present, there is no need to graft a psychoneurosis upon it.⁵

Before decompensation suggestion is the most potent treatment, but the physician must be careful not to give the impression he is unsympathetic. Of course, this can only be done after a careful examination and the patient feels thoughtful consideration has been given to his problem.

After decompensation, ouabain followed by digitalis, salyrgan and restriction of fluid intake if edema, and activities within the patient's work tolerance are the most important part of the treatment. However, this is a long story and cannot be included in this paper.

Those conditions which result in heart murmurs—both so-called organic and functional—should be treated early and intensely with the hope of preventing any heart change. Some of these are: rheumatic fever, infectious diseases, acute infections, syphilis, the causes of arterial hypertension, anemias and their causes, hyperthyroidism and many others could be mentioned.

Of the congenital lesions which are accompanied by murmurs the patent ductus arteriosus is the only one directly amendable to treatment and this is by surgical intervention. The treatment of many of this group consists in properly directing the child's activities, though some never cause any inconvenience.

CONCLUSIONS

Murmurs may occupy any part of or be continuous throughout the cardiac cycle.

Murmurs of organic or inorganic heart origin, of intracardiac or extracardiac origin, and murmurs of all types and the various other heart sounds are often confused. This oftentimes results in unnecessary treatment or lack of necessary treatment, much to the detriment of the patient in either case.

This confusion can be prevented in most of these cases by the employment of accurate cardiac instruments.

Murmurs in themselves are not disease and need no treatment, but when accurately diagnosed point to the underlying cause which often can be eliminated.

The earlier the recognition of the murmur and its cause, the earlier proper treatment may be instituted.

The advancement of methods of auscultation and the accurate registration of heart sound findings have increased our knowledge of the heart but all other methods of any value must be used, as well, to arrive at a complete, accurate understanding of the condition of the heart.

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ACTIVE TREATMENT OF TUBERCULOUS PULMONARY CAVITIES BY SURGERY*

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The remarkable advances in technique achieved by thoracic surgeons in the past decade, accompanied by an amazing lower operative mortality and higher percentages of good end results, has caused the cavernous type of tuberculosis to be considered a surgical disease. The sudden display of activity in the treatment of a disease which heretofore had been considered as one demanding only prolonged and passive management and in many instances one entirely hopeless, has in turn stimulated the interest of practitioners in all the fields of medicine. General practitioners and men in other special fields of medicine and surgery, who previously had only a passing interest in tuberculosis and who, for some reason or other, would visit a modern tuberculosis hospital where surgery is performed, would always return tuberculosis-minded and enthused over the changes in treatment. It would be an instance of, "I came, I saw, and I was convinced."

A clear understanding of the disease with respect to treatment is best developed by studying the classification proposed by Ornstein, Ulmar and Dittler. In considering what treatment to apply to a case having this disease, the question to answer is "what kind" of tuberculosis does the patient have, not the question "how much" disease is present.

Not all forms of tuberculosis should be treated by surgical collapse.

Primary infection or the so often mis-called childhood tuberculosis requires no form of surgical intervention. In the majority of instances this type will respond to bed rest and a good medical regime.

The second or re-infection type of the disease is the one that furnishes the cases in which surgery is necessary. This group must be further divided into, first, the acute exudative form which is the early onset of the disease and which at this stage is often mistaken for pneumonia, flu or some acute respiratory infection. In this form we are dealing with an inflammatory edema and there is no evidence that collapse treatment will influence its resolution. Second, the caseous-pneumonic form, in which the dose of the invading organisms has been overwhelmingly massive and causes cell destruction. Here the

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lesion first caseates, then it liquifies, and then breaks down into cavity formation. This is the form of the disease that we most commonly see, and the one that should definitely have some form of collapse started at once. These are the far advanced and highly contagious cases, many of whom in the past were considered hopeless from the standpoint of treatment. Experience has proven that in not more than ten to fifteen per cent of these cases will the cavity close spontaneously with bed rest and medical care alone. The third form of the re-infection type tuberculosis is the chronic productive form. This is characterized by acinous nodose lesions or fibrous tubercles that gradually, over a period of months and years, seem to seed downwards from the apex of the lung to the base and produce very little in the way of symptoms. There is no point in attempting to collapse these lesions. Therefore, the presence of cavity is the prime indication for the use of collapse therapy. It is for these cases that the following methods of collapse were designed.

To completely cover in detail all of the collapse procedures with their histories and modified techniques would require a monograph on the subject. An attempt here will be made to condense as much as possible, and list each of the important forms of collapse in its proper place, with the hope of furnishing a clearer and more general knowledge of the place surgery plays in the treatment of tuberculosis. A brief explanation of the mechanics, the indications and the dangers of each one will be given.

There are five different surgical procedures in use today with collapse of the lung as their object and one accepted technique involving drainage of the cavity. Various operative techniques are continuously being devised and are used by different operators, but no attempt here will be made to bring out these variations. As when a new drug is introduced on the market, so it is with a new operative procedure. Many individuals are prone to consider it a panacea and are wont to use it in place of older ones. It is the object of this discussion to point out that each of these six procedures has its own place in the treatment of tuberculosis and that no one of them should be used to the exclusion of any of the others. It is desired to show the role each one plays in the proper management of a case having tuberculous cavities.

In the eyes of the thoracic surgeon the problem is a technical and a mechanical one. The tuberculous cavity is really nothing more than the mechanical end-result of an acute disease. There is a hole in the lung which, as long as it exists, is an excellent incubator of the tubercle bacillus. It produces material that sooner or later will be coughed into a

healthy part of the lung, creating an acute bronchogenic spread or be disseminated through the blood stream and in either case will eventually result in the death of the patient. The cavity or hole in the lung is surrounded in all directions by elastic lung tissue. A point to be well remembered in order to visualize the mechanics. The normal tendency of elastic lung tissue is to contract and to shrink in all directions around the root area. This situation can be readily seen in a normal lung when the chest is opened at autopsy. The lung is then found in a collapsed state. The thoracic cavity is much larger in cubic measurement than the normally contracted lung and its shape and size is more or less maintained constant by means of the bony cage. Thus during life, the elastic lung is pulled out in all directions, stretched and expanded to fill the entire chest by means of a negative pressure or vacuum in the pleural cavity. When air is introduced into the pleural cavity by the method of inducing a pneumothorax, the vacuum is disturbed and the lung is allowed to retract away from the chest wall and assume its natural position contracting around the root area. The air in a pneumothorax does not push the lung away from the chest wall. When the lung is free to retract in all the circumscribed directions, the cavity gradually decreases in size until its lumen is obliterated.

This roughly describes the mechanics that exist and furnishes the rational for collapse therapy.

The first of the forms of collapse used is:

INTRAPLEURAL PNEUMOTHORAX

Although this procedure was devised and is being used by medical practitioners, it is still in a sense, a surgical technique.

The mechanism of this form of collapse has already been described in a preceding paragraph. After sufficient air has been introduced into the pleural space to obtain the desired collapse of the lung, it is then necessary to replace it at varying intervals in order to maintain that collapse. The rate of absorption of air from the pleural space varies with the case and requires individual attention and observation of the pressure readings. Also, the patient should always be fluoroscoped at the time of each refill in order that the state of collapse may be visualized. It might be mentioned here that in the literature one will find considerable emphasis upon the part that "rest of the lung" plays in healing tuberculosis. There is no question that rest is the important factor that ultimately causes healing, and that lack of rest will retard or prevent arrest of the disease. But in dealing with cavities the principal factor at first is a mechanical one. After the walls of the cavity are mechanically approximated, then

rest is definitely essential for permanent healing. It is hard to believe that pneumothorax collapse is effective because it provides rest for the lung. It does cut down the circulation and movements of respiration are inhibited to a certain degree, but anyone who has observed a collapsed lung under the fluoroscope can see it function and has noted that it expands and contracts with each respiration. Therefore, the factor of mechanics seems the more plausible and of the first importance.

The indication for this form of therapy is simply the presence of tuberculous cavitation.

Pneumothorax should be attempted as soon as the diagnosis of cavity is made. Time is a most important factor. Delay in attempting this form of collapse may condemn the patient to running the gauntlet of all the surgical procedures to be described hereafter. Early institution of pneumothorax will often avoid the necessity of more radical and serious procedures.

In a diseased lung there is a certain factor that may prevent the establishment of a good pneumothorax collapse. That is, the extension of the inflammation to the surface of the lung causing the parietal and visceral pleurae to become adherent. Delay in the institution of pneumothorax may allow this situation to occur so that when an attempt finally is made, either a poor collapse or none at all will result. In about half the cases in which pneumothorax is attempted it will be observed that some form of adhesions prevent the lung from pulling away from the chest wall. A surgical procedure has been designed to handle this type of case.

INTRAPLEURAL PNEUMONOLYSIS

The sole object of this operation is to create an effective and good pneumothorax collapse out of a poor one. This is done by severing the adhesions holding the lung to the chest wall. Local infiltration with novocaine is used and a special cannula is introduced between the ribs thru which a visual instrument similar to a cystoscope is inserted. The pleural cavity can then be thoroughly inspected and the adhesions studied. A cautery is then inserted through a second cannula in another interspace and the adhesions severed by direct vision.

The indication for this operation, therefore, is a case with cavity in which a pneumothorax has been induced and an incomplete collapse has resulted due to pleural adhesions. With the x-ray the adhesions can be seen holding the cavity open.

These adhesions vary in number, size, and shape. There may be any number of them from one to twenty or more. Some appear long and thin like fiddle strings. Others are short, thick, and cylindrical in shape. Others appear as accoridian pleated

sheets that run in all directions in the chest. Some of these sheet adhesions are as thin as tissue paper while others may measure up to one centimeter in thickness. The thicker ones most usually have lung tissue extending out into them for varying distances to the chest wall. This latter condition presents a very real danger; for if the cautery cuts through pulmonary tissue a broncho-pleural fistula results that may cause an empyema. Consequently the safest practice is to sever all adhesions close to the parietal attachment and even in the case of very thick ones, it is sometimes necessary to cut through the parietal pleura and dissect in the endothoracic space. Some of the thick adhesions also contain fairly large blood vessels, which, if they are not thoroughly coagulated before cutting, may cause severe bleeding. Often bands will be found attached to the aorta or the subclavian artery or to any other structures in the mediastinum in which case great skill is required in freeing them.

Thus it can be said that this operation, if performed by a skilled operator who has had considerable experience with this procedure and who has perfected his judgment as to when and where to cut and when not to cut, is a very minimal one as regards the discomfort to the patient. However, in the hands of one not so experienced, this operation can present far greater dangers than any other major surgical procedure in the chest.

The question occasionally is asked how soon after initiating a pneumothorax should one advise a pneumonolysis operation. The answer to that is, simply as soon as possible. When a pneumothorax collapse is started and adhesions can be seen to interfere with the collapse, and the space is large enough for the manipulation of the instruments, there is no reason for delay. The more rapidly that this is attended to, the quicker the cavity will close and the patient will be started on the road to recovery. There is considerable danger in delaying a pneumonolysis, and particularly in attempting to stretch adhesion bands by increasing pneumothorax refills. The bands under tension may break and in so doing tear lung tissue and result in a bronchopleural fistula and empyema. Also, the longer one waits the thicker the pleura becomes and the more difficult it is to sever the bands.

Many times when the pleural cavity is inspected through the thoracoscope, adhesions will be encountered that are so thick that they cannot be severed without the danger of cutting lung tissue, or the lung may be seen to be completely adherent over a wide area. When this situation exists, improvement of the pneumothorax collapse by pneumonolysis is impossible. In this case there is no

point in continuing the ineffective pneumothorax any longer. It should be stopped and the lung allowed to re-expand and some other form of collapse be considered immediately.

The problem now becomes more complicated in regards to selection of the proper procedure. Any one of the following three surgical techniques may be selected dependent upon certain factors which will be discussed with each in turn.

EXTRAPLEURAL PNEUMOTHORAX

The aim of this operation is to produce a selective collapse of the part of the lung involved by creating a pocket between the parietal pleura and the chest wall and maintaining this pocket with refills of air as with an intrapleural pneumothorax, or by filling the space with an oil preparation. The technique is usually performed by the subperiosteal removal of a full length of one rib. Then, by careful dissection through the rib bed or through the intercostal muscles, the endothoracic fascia plane is encountered just before reaching the parietal pleura. With blunt dissection along this plane, a line of cleavage is started. The entire lung with visceral and parietal pleurae together is carefully forced away from the inner surfaces of the ribs and intercostal muscles until a large space is obtained. The dissection is usually carried out over the apex of the lung and down the mediastinum to the lung root. The wound is then hermetically closed. This extrapleural space is then maintained by air refills similar to an intrapleural pneumothorax. If there is difficulty in maintaining the space because of tendency of the lung to re-expand, it may be converted into an oleothorax. The operation can be done under local or general anesthesia and is usually attended with little or no shock.

Due to the fact that the widespread use of this technique in this country is still rather recent, there has been considerable controversy over the indications for it. This author believes, however, that it should not be done until the usual intrapleural pneumothorax has been tried first. It must also be remembered that, like intrapleural pneumothorax, it is a reversible procedure. In other words, the lung is eventually expected to re-expand. Therefore, it cannot be compared to thoracoplasty which is an irreversible procedure that furnishes a permanent collapse of the lung. In spite of the fact that this operation is attended with little shock to the patient it is in no sense a harmless procedure. It carries with it more chances for serious complications than thoracoplasty does. The tearing down of infected lymphatic channels by blunt dissection extrapleurally sometimes causes a tuberculous empyema of the space. The space can be infected with other pyogenic organisms also. Instances have occurred where

the dissecting finger or instrument has ruptured through the lung into a large cavity with serious consequences. Other instances of spontaneous rupture of the cavity into the space have been reported. Persistent broncho-extrapleural-cutaneous fistulae have occurred. Persistent cutaneous oil fistulae have been seen. These few of the more serious and annoying events are cited, not to run down the technique, but to inspire caution and respect for the indications. This author has used it in a number of cases with gratifying results and feels that it definitely is of value and has a place among the methods of collapse treatment.

Because it is attended with less operative risk, it may be used on patients who might be considered not able to endure thoracoplasty—for example older individuals who might have heart or kidney trouble or other complications.

Some cases, in which the cavitation is in the mid-lung or near the base anteriorly, may have a better chance of a good collapse with extrapleural pneumothorax than with thoracoplasty.

Sometimes it may be combined with and made to join an old longstanding intrapleural collapse in which a portion of the lung is completely adherent. Although it is believed that in most of these cases thoracoplasty will eventually be necessary.

Its greatest usefulness, however, is in bilateral cases that are in poor general condition. After an extrapleural pneumothorax on one side the patient may improve enough to do a thoracoplasty on the other. Or he may tolerate a bilateral extrapleural better than a bilateral thoracoplasty. A patient may have an intrapleural pneumothorax or a thoracoplasty on one side, and, because of a low vital capacity, it is necessary that he have an ultra-selective collapse on the other.

Some cases with bronchial tuberculosis and asthma associated with their cavitation will tolerate this operation better.

So it can be seen that there are definitely some instances where it seems wise to choose this method of collapse. Undoubtedly as time goes on the indications will be more clear.

THORACOPLASTY

This is the one major procedure that furnishes a complete and permanent collapse of the lung. An irreversible procedure in tuberculosis is often desirable from many points of view. For one reason, there is not the question of how long should the collapse be maintained and the fear that when the lung re-expands the cavity will re-open. In other instances to be described later it is essential.

Recent changes in technique have made this a much less deforming operation than it used to be.

When one makes such radical changes in the bony skeleton anywhere, they must naturally expect some difference in that person's figure. Yet there are many who consider that a contraindication. It is hard, though, to understand this objection and to reconcile it with the fact that amputation of an arm or leg is more noticeable, and demurred to less often. Thoracoplasty is a life saving operation and it is a question of either performing it or doing nothing for the patient.

The technique described in 1935 by Carl Semb of Oslo has improved this operation very considerably. A brief description of one technique follows: a long, curved paravertebral incision is made, the back muscles cut across and the scapula retracted. The serratus muscles are then sectioned above their costal insertions and the perforating branches of the first and second costal nerves cut. An excellent exposure is then obtained. The third, second, and first ribs are then resected subperiosteally in their full lengths. The intercostal bundles consisting of muscles, nerve, and vessels are then completely removed. The posterior rib stumps and a portion of the transverse processes are then removed. A line of cleavage is then found in the endothoracic space and the entire apex of the lung peeled downwards from the great vessels, the mediastinum, the dorsal vertebrae, and the sternum. This technique of decollation or apicolysis is most important and furnishes a maximum circumscribed collapse of the upper part of the lung. The periosteum of the ribs is left intact in order to later form a bony roof over the collapsed lung, thereby preventing any re-expansion. The wound is then closed in layers without drainage. After about three or four weeks the same wound is re-opened and the fourth, fifth, and sixth, and sometimes the seventh ribs are removed subperiosteally with their intercostal bundles and closed as before. The resection of this number of ribs is sufficient in most cases. The number of ribs or stages of operation necessary is dictated by the bottom level in the lung at which the pathology exists.

The indication for this operation are those cases in which intrapleural pneumothorax was impossible or failed to collapse the diseased area.

Some cases are found who have had a pneumothorax over a period of years and when attempts are made to abandon it the lung refuses to re-expand. Thoracoplasty then is necessary.

As time goes on and more lungs collapsed by pneumothorax are allowed to re-expand, cases are being discovered in which severe symptoms develop due to the permanent shift or deviation of the mediastinum and torsion of the heart and great vessels. Four cardinal symptoms are sometimes ob-

served: severe shortness of breath on exertion, irregular pulse, cyanosis and anginoid pains. These may become so severe that an irreversable collapse, as obtained with thoracoplasty, is indicated.

For the sake of brevity and because this discussion is principally concerned with the treatment of cavities, there will be no description of thoracoplasty in connection with empyemata.

Occasionally there is encountered a pathological situation which causes a certain type of tuberculous cavity to occur. This has been variously described by Coryllos,^{2,3,12} Ornstein,¹ Eloesser¹³ and others as a check-valve, ball-valve or tension cavity. This type is extremely resistant to any of the aforementioned methods of collapse. Such a situation exists when there is tuberculous infection of a bronchus that leads to a cavity. A proliferative lesion in that bronchus or contraction of scar from a healed ulcerative lesion may partially obstruct that airway and set up a mechanical ball-valve action. With inspiration, the air can freely enter the cavity but at times is prevented from flowing out. This builds up a positive pressure in that cavity, blowing it up like a balloon. If observed over a period of time, the changes or fluctuations in size of that cavity may be noted by x-ray. Sometimes these cavities may suddenly close spontaneously if the bronchus becomes completely occluded and the air within is absorbed. However, most usually these cases resist the ordinary forms of treatment. An operation has recently been devised by Monaldi designed to deflate and furnish drainage of this type of cavity.

TRANSTHORACIC DRAINAGE OF TUBERCULOUS CAVITIES

Patients who have a check-valve cavity frequently complain of severe spasmodic coughing spells particularly at night. Their cough might come on suddenly and be hard, and non-productive and racking, then all at once it will become productive and they will be able to expectorate a good quantity of sputum. This is probably due to a sudden release of the intracavitary pressure and exudate with the opening of the obstructed bronchus.

The operation is performed under local anesthesia. After the cavity is carefully localized, a needle is inserted and intracavitary pressure readings taken. Through a small skin incision made over the area, a specially constructed trocar and cannula is then inserted between the ribs through the pleurae and lung tissue into the cavity. The trocar is withdrawn and a special rubber catheter is threaded through the cannula. The cannula is withdrawn, leaving the end of the catheter in the cavity. The catheter is then connected to a suction apparatus and continuous, low suction maintained. A gradual decrease in the

size of the cavity is noted over a period of several weeks and many cases of complete closure have been reported. The length of time the technique has been used is too short for a complete evaluation of end results. Several theories concerning the rational of this procedure have been proposed that may be studied in other articles on the subject. In the main, the attempt is made to prevent the accumulation of positive pressure and secretions in the cavity and to convert it into a small tuberculous fistula. In time, if the check-valve mechanism is destroyed, a subsequent thoracoplasty may be performed with reasonable assurance of success. Recently some surgeons prefer thoracoplasty first, followed by this procedure afterwards.

The one absolute requirement before this operation can be performed is the fact that the pleural space overlying the cavity must be completely obliterated. If this is not so, a complicating empyema will result. Therefore, if a pneumothorax has been done previously, it must be abandoned and the lung completely re-expanded and stuck before needling the cavity.

At present deflation of the cavity by some method is the only thing that offers some promise of handling this very difficult type of case.

PHRENIC NERVE OPERATIONS

Only brief mention will be made concerning this procedure. Since its wide use a few years ago, it has fallen somewhat in esteem. Like many new and simple remedies it has been over-used, and now the pendulum is swinging in the opposite direction. It has some value, however, in the hanging type of cavity described by Slavin¹⁴ in conjunction with a pneumothorax. It is also conceivable that some cavities in the mid-lung or lower lobes will close with its use. However, when it is used for apical cavities with reported good results, it must be remembered that from ten to fifteen per cent of cavities close spontaneously. Its use in bilateral cases should be condemned because of the attendant lowering of the vital capacity and minimum chance of closure of the cavity. There are other procedures that give a better selective collapse with a maintainance of good lung volume.

SUMMARY

More detailed information on any of these collapse procedures may be had by a study of the references. This was presented more or less as a summary of the more important methods of collapse in the treatment of tuberculous cavities. The attempt was made to link the indications for each and show their relationship to the logical and intelligent management of such a case. It is hoped that by showing

the present day activity in the treatment of this ancient malady, interest will be aroused in all medical practitioners so that they will unite and help eradicate this disease.

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"Word has not reached our office of all the broadcasts, but we have the text of the talk given by Dr. J. L. Lattimore, Topeka pathologist, and think a sentence or two will be worth your reading:

"In addition to all of the various commercial products that you see in a drug store, the pharmacist must carry a large and variable stock of drugs for the filling of prescriptions as prescribed by your physician. This stock must be kept under good conditions, so that no inactive drugs will be furnished the customer; thus the pharmacist often plays a very important part in your recovery from an illness.

As a general rule, pharmacists discourage so-called counter prescribing, the practice of a customer asking the pharmacist to supply drugs for a certain illness. The fallacy of this practice is more the blame of the customer, as he assumes the role of making a correct diagnosis.

If, during the present emergency, your druggist states that it is impossible to secure certain drugs, rest assured that either supply has been cut off or used up, so take the fact with a smile as you will be called upon to do many times during the next few months or years.

Modern pharmacy is marching forward, keeping abreast of the times; hand in hand with the medical profession they pledge to the millions of their patrons to work to the end that you will have a healthful and happier life. Remember that when you take your prescription to a pharmacist and he retires to his prescription counter to compound it, that he is rendering to you a service that no other individual, be he the greatest statesman, can fulfill. So I say to you, not for advertising purposes, 'Your druggist is more than a merchant!'—From the Kansas Pharmaceutical News.

UNDULANT FEVER

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The first cases of undulant fever in Kansas were reported in 1927 by Major C. C. Hillman of the United States Army Medical Corps at Fort Riley. Since that time a total of more than eleven hundred cases and forty-five deaths attributed to the disease have been reported in this state. This is an average of eighty cases and three deaths a year. But the reported incidence of the disease has steadily increased so that one hundred sixty-five cases were reported in 1940. Undulant fever is an important disease in Kansas, largely because we are a dairy state, and therefore all physicians should be constantly on guard against it.

HISTORY

Apparently the disease has existed for many centuries, but it was not until 1861 that it was identified as a separate disease by Marston who called it "Mediterranean, or gastric intermittent fever." The causative organism was isolated in 1887 by Bruce from the spleen of Marston's patients who had died with the disease. In 1897 Wright and Semple demonstrated that the organism isolated by Bruce was agglutinated by the blood serum of those affected with the disease. Hughes in 1897 gave the descriptive name of "undulant fever" to the human disease.

Undulant fever was a prevalent disease among military and naval men stationed on the Island of Malta, and for this reason was often called "Malta Fever." Zammit proved conclusively in 1906 that it was being spread there by milk from infected goats. Mr. Thompson of the United States Bureau of Animal Industry was sent to Malta in 1905 to buy milk goats. He brought back sixty-one female and four male goats. Eight men who drank goat's milk on the voyage back developed undulant fever, and one woman at Athenia, New Jersey, who drank milk from these goats while they were in quarantine also developed the disease. All of these goats were subsequently killed. In 1911 Ferenbaugh and Gentry showed that the disease was endemic in southwestern Texas and came from infected goat's milk. It was shown that the condition had existed in Texas for a long time.

Meanwhile studies had been carried on in other animals. Professor Bang of Denmark, assisted by Stribolt, isolated in 1897 an organism from the fetuses and fetal membranes of cows that had

aborted, and showed that this germ was the cause of infectious abortion of cattle. This condition is now called "Bang's abortion disease," or simply "Bang's disease," or "contagious abortion in cattle." In 1911 Smith and Fabyan, and Schroader and Cotton, working independently, demonstrated that this organism in cows collected in the udders and is discharged in the milk of infected cows. Traum in 1914 isolated an organism from fetuses born prematurely from cows.

But it was not until 1918 that A. C. Evans showed that the organisms isolated from the three sources, goats, cows, and hogs, were identical organisms to be differentiated only with great difficulty. Meyer and Shaw in 1920 gave the name *Brucella* to this genus of bacteria, in honor of the discoverer. This genus contains three species: *Brucella melitensis* from goats, *Brucella abortus* from cows, and *Brucella suis* from hogs. Infection with this genus in any animal, including humans, is now commonly called "Brucellosis."

The first proven case of brucellosis originating in the United States was reported in a nurse in 1904 at a Washington, D. C., hospital. But she had never used goat's milk. Keefer in the United States reported a case of human brucellosis in 1924 at first thought due to *Brucella abortus*, but later found to be due to *Brucella suis*. The first cases of brucellosis in humans due to *Brucella abortus* were reported in 1925 by J. T. Duncan of Rhodesia.

It has now been abundantly proven that all three species of *Brucella* cause undulant fever in humans, and that these species are not host specific. For example, *Brucella suis* may be excreted occasionally in the milk of cows as well as hogs. Cows are probably infected from hogs by association on the same farm. All three species of *Brucella* have been isolated at various times from the blood of patients suffering from undulant fever, and injection of any of these species causes the same symptoms of undulant fever in humans. In general, the *Brucella melitensis* and *suis* cause more severe symptoms than *Brucella abortus*, but more depends apparently on the constitutional reaction of the individual than on the species. Many cases of *Brucella abortus* infection are acutely ill and some of them die.

PREVALENCE

Undulant fever is now known to be a widely disseminated disease all over the world, the greatest incidence being in those areas where the most goats, hogs, and cows are raised, and where the most raw milk and other raw dairy products are used. Between 2,500 and 3,000 human cases are reported annually in the United States, but many times this number actually occur because the disease is neither

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well recognized or reported. Skin testing and blood testing surveys on humans indicate that about seven to ten per cent of the population is infected, frequently subclinically.

MODE OF DISSEMINATION

All ages and both sexes are susceptible, but young adult males between twenty and forty-five years of age are most frequently affected because of occupational hazards in connection with raising, killing, or handling livestock for food. Although children are frequently infected they do not often develop marked clinical symptoms because of an apparent relative immunity. Undulant fever may be acquired directly by dairymen, cattle raisers, veterinarians, and meat packing employees while handling livestock. Laboratory workers may be infected directly by handling *Brucella* organisms in the laboratory. No human cases have ever been traced to eating meat.

The most usual way of acquiring undulant fever is by consuming raw milk or other raw dairy products from infected animals. This is particularly true in cities where the only contact with animals is indirect, through raw milk. More cases of human brucellosis in the United States are traced to raw milk than to any other source. The disease is not transmitted from humans to humans.

SYMPTOMS

The incubation period varies considerably, reports ranging from one week to six months. In the case of undulant fever acquired by drinking raw cow's milk the incubation period generally lies between one and three months.

The symptoms of human brucellosis vary from subclinical ambulatory cases to malignant bedridden cases. Huddelson and Hardy in "Brucellosis in Man and Animals," published by the Commonwealth Fund, describe the intermittent type, ambulatory type, undulant type, malignant type, and the atypical chronic type. Such classification of symptoms is not so important; rather one should have a general symptom-complex in mind. The typical symptoms are weakness, fever with morning remissions, headache, muscular or arthritic pains, profuse sweats, chilly sensations and actual chills, nervousness, constipation, secondary anemia, relative lymphocytosis, enlarged spleen, positive brucellin skin test, and positive blood agglutination test. Cases vary as to the relative prominence of these various symptoms.

In the intermittent type the onset is insidious with a sense of progressing afternoon weariness. Then follow general aches, slight headache, poor appetite, chilly sensations early in the evening, moderate insomnia, and slight fever. Many develop backache, stiffness or pain in the neck and joints, constipation,

loss of weight. Some develop a hacking cough. Night sweats are frequent, often profuse. Severe chills may occur, but it may be several weeks before the patient walks into the doctor's office, and even then he may be unable to adequately describe his symptoms. There may be no physical signs on examination. The spleen may or may not be enlarged and the abdomen tender. The patient may be up in the morning and in bed in the afternoon. Weakness, headache, and loss of appetite may be the only symptoms. The illness lasts six weeks to four months with one-third of the time spent in bed. Temperatures range from normal in the morning to 104 degrees in the evening. On returning to work the patient may have a relapse.

In the ambulatory type the illness may be short and mild so that patients scarcely realize that they are ill. This might be called a subclinical infection. The onset is insidious with often only one constant symptom, weakness or reduced endurance. Many of the symptoms of the intermittent type are present at times. The temperature ranges between normal in the morning and 101 degrees in the evening. The illness may last only a few weeks or months.

It is characteristic of the undulant type that there are relapses with periods free of fever. The onset is like the "flu" with weakness, general aches, headache, loss of appetite, and dizziness. After a period of illness the symptoms subside, only to return in stronger form. Night sweats appear. The temperature rises day by day like a step ladder. Morning remissions are marked. The disease may last for about four months with acute symptoms, and then become chronic.

The malignant type is usually caused by *Brucella melitensis*. There is a sudden onset, an acute course, and a fatal ending after two weeks. There is a continuously high fever until death, great prostration, chills, profuse perspiration, delirium, coma, and enlarged spleen.

The atypical chronic type may have vague indeterminate symptoms resembling ambulatory typhoid fever, bronchopneumonia, tuberculosis, rhephoid fever, bronchopneumonia, tuberculosis, rheumatism, meningitis, cystitis, hyperthyroidism and even acute surgical conditions. In such cases laboratory methods are essential aids in arriving at a diagnosis. Chronic brucellosis cases may have few symptoms, only headache and the ever present unexplained weakness. There may be vague pains in various parts of the body, even suggesting chronic appendicitis. Arthritic or muscular pains are common. There may be slight elevations of temperature toward evening. Many develop mental and neurological symptoms of depression, apprehensiveness, irrita-

bility, sleeplessness, shedding of tears without cause, tremors, and even "mental or nervous breakdowns." There may be temporary disturbances in speech, loss of memory, loss of various sensations, and sensitivity to light. Such symptoms may come and go for twenty years or longer. No diagnosis of "neurasthenia" should ever be made without first ruling out brucellosis.

DIAGNOSIS

The diagnosis may be made when the patient presents the characteristic symptom—complex, or when atypical symptoms are supported by laboratory evidence. The most important single laboratory test is the blood serum agglutination test. Five or ten cubic centimeters of blood are sent to the laboratory where the agglutination test is run in the same manner as for typhoid fever. The skin test for brucellosis is applied in the same way as the Mantoux tuberculin test, the material used being a killed culture of brucella organisms or a filtrate. But the skin test alone is not diagnostic since, like the tuberculin test, it may indicate infection of long ago, even after recovery. The opsonocytophagic test recommended by Huddelson is somewhat complicated and does not materially aid in diagnosis, we believe. The greatest reliance should be placed on the positive agglutination test, positive in any titre, in combination with suspicious symptoms. Blood from all acute cases should be examined bacteriologically for an attempted isolation of brucella organisms. Isolations are occasionally successful.

PROGNOSIS

The prognosis as to fatality is generally good, only three or four per cent of reported cases terminating fatally. The ultimate cure as to freedom from symptoms is problematical, no two cases reacting similarly. A large number of cases, almost all, have relapses or recurrences of symptoms to some degree, sooner or later.

TREATMENT

The treatment of brucellosis at present is of two forms: specific vaccine therapy or the administration of one of the new sulfonamide drugs. The degree of success claimed for these two methods of treatment varies considerably.

The vaccine treatment consists of injecting 0.25 cubic centimeter of a heat-killed suspension of mixed brucella organisms intramuscularly every two or three days, increasing the dose fifty per cent each time until one cubic centimeter is given at a dose, but not exceeding this dosage. The injections are continued until a severe systemic reaction has occurred, consisting of an accentuation of the patient's subjective and objective symptoms. The injections are then

stopped to permit the fever to fall by lysis. If the expected response is not achieved after seven injections, the patient should be given a rest of several weeks before continuing treatment.

It is apparently only in the very early acute cases that the antiserum of Lee Foshay is of value. The therapeutic results in such cases is sometimes amazing.

The various sulfonamide drugs are given in their usual dosages when treating undulant fever.

UNDULANT FEVER IN KANSAS CITY

The first recorded mention of undulant fever occurring in Kansas City, Kansas, appeared in an article by Dr. Fred E. Angle in the *Journal of the Kansas Medical Society* of October, 1929. Ten cases were reported therein. In the *Journal of the American Medical Association* of September 21, 1935, the same physician reports the result of vaccine therapy on one hundred patients. Although some of these cases were non-residents, most were residents of the city. In the *Annals of Internal Medicine* of June, 1937, Drs. Angle and Algie describe how one Kansas City, Kansas, resident became insane from undulant fever and had to be admitted to the state mental hospital. Investigation revealed that these cases of undulant fever were due to using raw milk. In the *Annals of Internal Medicine* of October, 1938, Drs. Angle, Algie, Baumgartner and Lunsford give the results of a skin testing survey for undulant fever among school children. It was found that nine per cent of the children reacted positively to the test and that many of them had some manifest symptoms of the disease. Investigation revealed that the positive reactors were using raw milk or had used it in the past. We may conclude that undulant fever due to raw milk has been a problem in this area for a long time.

In 1940 a total of eighty-two cases of undulant fever were reported in the city, of which number fifty-two were residents. Of the thirty non-resident cases, thirteen were residents of Kansas City, Missouri. The majority of the cases were in the thirty to fifty age group, but four children were reported, one as young as three years of age. None of the patients had had direct contact with animals except a veterinarian, a dairyman's wife, and a meat packing worker, but these three also used infected raw milk. Most of the cases could be described as "white collar" workers having no contact with animals. Four cases were lawyers. One lawyer died of undulant fever in 1940. Without exception, all resident cases investigated had used raw milk.

The milk and cows of seventy-four raw milk dairies were tested, and of this number seventy-two dairies showed evidence of having Bang's disease in

their herds. Some dairies had as high as sixty per cent of their cows infected. Of all cows tested in this milk shed an average of twenty per cent were found infected. In addition, the *Brucella abortus*, the causative organism of undulant fever, was isolated directly from the milk of cows, from bottled raw milk, and from the blood of undulant fever patients. The evidence is overwhelmingly conclusive that the reported cases of undulant fever acquired their undulant fever through raw milk from these dairies having Bang's infected herds.

PREVENTION

The problem of prevention may be approached in two ways: either test the cattle by means of the blood serum agglutination test and remove the reacting animals, or pasteurize the milk. Testing cows gives only a poor protection since the disease may appear in the herd and be transmitted through the raw milk between tests. The three year old boy who developed acute undulant fever is a good example of this for he obtained raw milk from a herd which was tested twice a year to meet the requirements of Kansas City, Missouri. After the boy became ill this herd was tested again and two new infected cows were found. No vaccination of cows offers any protection against undulant fever, and moreover vaccination causes a positive blood serum reaction in the cow which cannot be distinguished from the reaction due to true infection. The United States Department of Agriculture and the Kansas State Livestock Sanitary Commissioner recommend vaccination of calves under eight months of age, but not older animals, to prevent abortion but not as a measure to safeguard the milk supply.

Pasteurization offers the most nearly perfect safeguard, not only against undulant fever, but also against all milk-borne diseases, of which there is a long list. Science has repeatedly shown that pasteurization does not materially alter the taste, cream-line, vitamin or food value of milk, and moreover, children thrive better on pasteurized milk than on raw milk. As physicians we should consistently recommend the use of only pasteurized milk and dairy products. The Council on Foods and Nutrition of the American Medical Association is quoted in the *Journal* of November 16, 1940, as follows: "The pasteurization of milk is a public health measure. The public should demand pasteurized milk for drinking and the use of pasteurized milk in milk products. The dairy trade should universally adopt pasteurization in the interest of public health."

Kansas City, Kansas, is endeavoring to safeguard its milk supply. Dairymen have the choice of either testing their herds or of pasteurizing their milk. Seventeen new farm dairy pasteurizers have been

installed so that today about ninety per cent of all milk sold in the city is pasteurized. However, raw milk still sold in the city continues to come from infected cows as evidenced by the fact that, at present writing, we continue to isolate the *Brucella abortus* from raw milk. Eleven cases of undulant fever were reported in the first six months of 1941 due to raw milk.

All of our laboratory work on milk was done by the Kansas State Board of Health Laboratories.

Undulant fever is a disease of major importance in Kansas because we are a dairy state, and so all physicians should be on guard against it. Dairymen, grocers, restaurant owners, and others handling and serving milk to the public should be warned that they may be held liable for illnesses caused by their infected raw milk.

ADRENAL CORTEX CARCINOMA

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Masculinizing malignant tumors of the adrenal cortex are so infrequent as to render the reporting of each new case almost obligatory. The wide gaps in our present knowledge of adrenal pathology can be spanned only by the accumulation of integral facts gleaned from individual case reports.

Since the variations of this syndrome according to sex and age period have been so thoroughly discussed in the recent literature,^{2,4,7,12} for the sake of brevity we shall confine our discussion to the salient features of the clinical picture in the post-adolescent female. The most frequently described phenomena are those of masculinization: 1. hirsutism involving the face, neck, extremities, and pubes with the development of the typical male escutcheon; 2. deepening and hoarseness of the voice; 3. amenorrhea; 4. atrophy of the breasts; 5. changes in sexual attitude with loss of libido and occasionally a tendency to homosexuality; 6. enlargement of the clitoris; 7. involution of the external genitalia. Other frequent findings are obesity, acne or even seborrheic dermatitis, hypertension, purplish striae, florid complexion and asthenia. The laboratory may prove helpful by demonstrating polycythemia or deranged carbohydrate metabolism.

The demonstration of a mass in either suprarenal

area by palpation, or by roentgenograms after air insufflation, or pyelograms, obviously renders more secure the diagnosis of adrenal cortex tumor.

In 1924 Keyser and Walters¹ reported a case of adrenal cortical tumor showing evidences of a multiple endocrinopathy with many features pointing to an adrenal cortical tumor, which at operation proved to be carcinoma.

Lescher² in 1935 supplements the report of a case of masculinizing adrenal cortical malignancy with a discussion of the metabolic processes involved quoting rather extensively from the literature. He also stresses the similarity of this syndrome to pituitary basophilism (Cushing),³ while Cahill et al one year later mention arrhenoblastoma of the ovary as a third possibility in the differential diagnosis. The latter authors depict with considerable clarity the various forms of the adrenal cortical syndrome manifested at different stages of growth and development and classify connective tissue neoplasms of the suprarenal as a complement to Goldzieher and Ewing's classification of medullary and cortical tumors respectively. Ten illustrative cases with characteristic secondary sexual manifestations were simultaneously presented by the authors (Cahill et al) in five of which proven suprarenal cortical carcinoma was demonstrated.

An adenoma of a solitary adrenal was responsible for the clinical syndrome of pituitary basophilism in a young woman observed by Lukens, Flippin, and Thigpen.⁵ These authors coincidentally reported decreased carbohydrate tolerance in forty-nine per cent of fifty-five proved cases of tumor or hyperplasia of the adrenal cortex.

Lawrence⁶ reported three cases, two of which seem sufficiently interesting to warrant further comment here. The first, a thirteen-year-old girl presented symptoms of precocious menstruation followed by masculinization with amenorrhea of seven years duration. Extirpation of an encapsulated cortical tumor effected complete regression of symptoms, although previous laparotomy had revealed only sclerotic ovaries. In the second case, a twenty-four-year-old female, hormone assays of blood and urine were negative for prolactin and estrin, and positive for testicular hormone although physical examination disclosed no masculinizing characteristics. The symptomatology was primarily hypoglycemic in character.

Walters and Keplar⁷ reported the successful surgical removal of adrenal cortex tumors in seven consecutive cases presenting classical secondary sexual changes, emphasizing the importance of continuous pre- and post-operative vigilance. They expand the clinical picture to include purplish striae, florid complexion, acne, hypertension, decreased carbohydrate

tolerance, osteoporosis and asthenia — factors relatively common to all cases irrespective of age or sex.

The importance of these observations is illustrated by a case with hypertension, osteoporosis and amenorrhea as the outstanding features, in which hair on the upper lip was the only masculinizing characteristic; adrenal cortical malignancy was proven.⁸

In 1938 Eliason⁹ reported two cases of adrenal cortical syndrome, and a third, due to benign adenoma of the cortex was added by Scholl.¹⁰

The cytological studies of Strohl¹¹ constitute a significant adjunct to the pathology of the adrenal cortex.

Potter¹² prefaces the report of a case of adrenal cortex tumor by a fairly complete general discussion of the clinical picture in this condition.

More recent contributions include an extensive discussion by Gross¹³ of the various neoplasms producing endocrine disturbances in childhood, in which several cases of adrenal cortex tumor are presented. Crooke and Callow¹⁴ discuss the differential diagnosis of forms of Cushing's Syndrome, reporting two cases of malignant tumor of the adrenal cortex. Another case is presented by Tenenbaum¹⁵ in which the diagnosis was materially aided by retrograde pyelography. Cope and Schatzki¹⁶ introduce a simple and safe technique for perirenal air insufflation which has subsequently been satisfactorily used by one of us.

An interesting discussion of the relationship of the adrenal cortex to secondary sex characteristics with illustrative excerpts from operative cases is given by Broster.¹⁷ Several other articles and case reports of this interesting syndrome appear in the recent literature.¹⁸⁻³⁰

CASE REPORT

A. P., a twenty-three year old white female, was first seen in the office April 16, 1938, complaining of edema of the feet and ankles and frequent, severe headache for the past year. Nocturia two to five times and frequency had been present for some months preceding the edema, occasionally with burning on urination. She had noticed spots before her eyes and dizziness for several months. Anorexia, night-sweats, and a nonproductive cough had been present for an indefinite period. The menses had been regular until June, 1937, when she entered upon a period of amenorrhea, which had persisted until March 15, 1938. At that time she started flowing profusely and continued to flow daily, varying from spotting to profuse flow, until her first visit. Physical examination at that time revealed a fairly well developed, tired-looking, young female with no observable abnormalities. Vaginal examination revealed an intact hymen with a small amount of apparently normal menstrual bleeding. Upon rectal examination the uterus was felt in second degree retroversion. Laboratory examination, consisting of complete blood count, urine analysis, and sedimentation rate, was all within normal limits. She was treated with anterior pituitary extract and anterior pituitary-like substance from pregnancy urine for four

months, during which time she continued to menstruate small amounts daily and her edema underwent alternate remissions and recurrences.

On admission to Saint Margaret's Hospital August 25, 1938, essentially the above history was obtained with the additional fact of five pounds loss of weight in the preceding two weeks. Physical examination at this time was essentially negative except for the following observations. The breasts were not well developed. A mild scoliosis was present. A few coarse rales were heard in both midlung fields. There was definite hypertrichosis of the extremities. Laboratory examination revealed urine, complete blood count, sedimentation rate, and blood chemistry (including NPN, creatinine, uric acid, sugar, calcium, phosphorus, carbon dioxide, chlorides, cholesterol, and total protein) to be in normal limits. A diagnostic curettage yielded a fair amount of endometrial tissue, diagnosed from histologic sections as acute and chronic endometritis. She was dismissed August 30, 1938, unimproved.

During the ensuing nine weeks she was treated with repeated injections of anterior pituitary extract and anterior pituitary-like hormone, sedatives, and fluid and salt restriction. Her metrorrhagia continued. The edema extended to the face and neck. Her blood pressure gradually became elevated to 150 systolic, 110 diastolic. Marked weakness and fatigue were complained of constantly. Pain in the right lumbar region appeared, and a mass was noted in the right upper quadrant extending three to four fingers' breadth below the right costal margin. She was readmitted to Saint Margaret's Hospital November 3, 1938.

Readmission physical examination revealed a fairly well developed, poorly nourished white female, lying restlessly in bed, complaining of backache and of perineal soreness. The hair was dry and stringy. The face and shoulders were covered with a purplish, acneform eruption. Many dark, coarse hairs occupied the cheeks and upper lip. Upon questioning, the patient stated she had noticed their appearance in the past few weeks. The skin generally was oily and coarse. The breasts were atrophic, having definitely regressed in size since previous admission. The examination of the eyes, ears, nose and throat, heart, and lungs revealed no abnormalities. Examination of the abdomen revealed a mass in the right upper quadrant, palpated with some difficulty because of extreme tenderness and muscle guard. The pubic hair extended up to the umbilicus in typical male distribution. The dark hair on the arms and legs was noticeably increased. Pelvic examination revealed a small amount of foul, brownish discharge flowing through the reddened, inflamed introitus. With some difficulty the uterus was felt in second degree retroflexion, and the adnexa were found to be tender. No definite mass was palpated. Neurologic examination was negative.

During the next three weeks the patient became slowly worse. Repeated complete blood chemistries were within normal limits. Unfortunately serum sodium and potassium were not determined. Urine analysis, liver function tests, serologic studies, roentgenographs of the chest, sella turcica, and gastrointestinal tract were negative. A gastric analysis showed normal acidity.

It was felt the diagnosis lay between arrhenoblastoma of the ovary and adrenocortical tumor. On November 27, 1938, intravenous pyelograms showed the right diaphragm elevated and the right kidney pelvis pushed downward, making the last named diagnosis the most probable. November 28, 1938, the abdomen was explored through an upper right rectus incision. Carcinomatous nodules were found in the liver. A large tumor mass was seen in the right adrenal region. Biopsy of a liver nodule was taken.

The postoperative course was rapidly and progressively downhill with jaundice, nausea, vomiting, distension, and delirium until death, December 6, 1938.

PATHOLOGY

At necropsy, performed two hours after death, external findings included icterus, hirsuties, and high grade edema of the lower trunk and extremities. Examination of the heart and lungs revealed no significant pathology. The abdominal cavity contained approximately 3000 cc. of sanguinous fluid. The liver and other abdominal viscera were displaced to the left by a large retroperitoneal mass in the right flank. The liver was moderately enlarged and contained numerous nodular masses of light yellowish brown color varying from two to eight cm. in diameter (Fig. 3). Only one-third of the liver mass was actual liver tissue. The gall bladder and biliary passages were patent and free of pathology. The kidneys showed no intrinsic pathology. The left adrenal gland weighed five grams and showed a normal amount of cortical and medullary tissue, and the microscopic structure was normal.

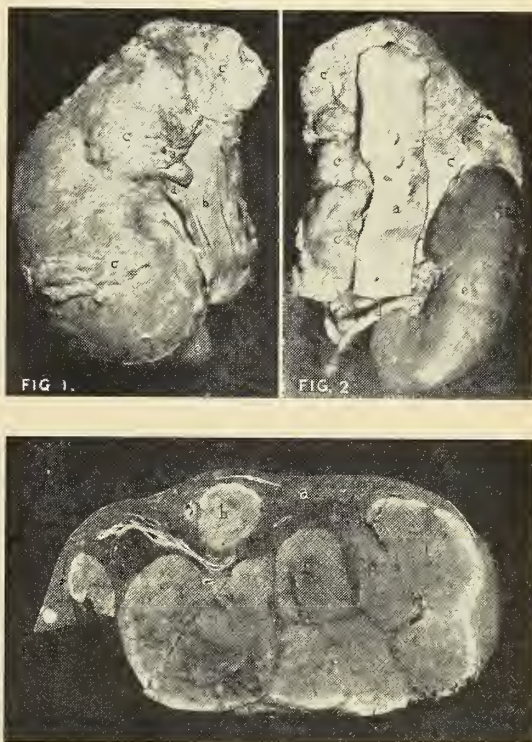


Fig. 1. Anterior aspect of adrenal tumor: a. Wall of adrenal vein reflected to show tumor mass filling its lumen and extending into inferior vena cava; b.; c. Tumor mass; d. Mouth of renal vein; e. Lower pole of right kidney.

Fig. 2. Posterior aspect: a. Aorta; c. Tumor mass; d. Ureter; e. Kidney.

Fig. 3. Cross section of liver showing massive metastases, b-b, compressing liver substance, a.

The right adrenal gland was replaced by a large ovoid tumor mass measuring sixteen by ten by five cm. and weighing 1270 grams. The tumor extended past the mid line to the left, and lay in a position between the aorta and the inferior vena cava so that the vena cava was stretched and flattened over its anterior surface (Figs. 1 and 2). The cut surface of the tumor showed a densely cellular, yellowish-

brown tissue with alternate areas of necrosis and hemorrhage, and a few areas of dense white cellular tissue. Microscopically, the tumor was made up of large numbers of oval, rounded, or polyhedral cells incompletely separated by trabeculae, and showing no tendency to alveolar formation. In many areas the tissue resembled the zona reticularis of the normal adrenal cortex. Occasional atypical mitotic figures were seen. The uterus was of normal size and the endometrium appeared somewhat hyperplastic. The ovaries were of normal size but showed areas of interstitial hemorrhage on the surface.

In a review of 7,000 autopsies at the University of Kansas Hospitals, 143 cases of adrenal tumor were found, of which eighty-four were primary and fifty-nine secondary. Of the eighty-four primary tumors, the following were found:

Lipoma	1
Paraganglioma	6
Benign adenoma	67
Angioma	1
Lymphangioma	1
Endothelioma	1
Neuroblastoma	2
Cortical carcinoma (adenoma malignum).....	5
Total	84

SUMMARY

1. A case of adrenal cortex carcinoma with autopsy findings is reported.
2. Virilism as the chief clinical feature is stressed.
3. Retrograde pyelograms proved helpful in localizing the tumor mass.
4. A review of the incidence of primary and secondary adrenal tumors in 7,000 autopsies is given.

Note: The authors wish to express their gratitude to Dr. P. M. Krall and Dr. H. R. Wahl for their cooperation in this case study.

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CLINICAL OBSERVATIONS ON THE USE OF DEPROTEIN- ATED PANCREATIC TISSUE EXTRACT* IN SURGICAL AND ROUTINE CATH- ETERIZATION

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Any agent which may be relied upon to facilitate certain types of instrumentation such as ureteral or urethral catheterization in a reasonable percentage of cases, constitutes an important addition to the surgical armamentarium.

It has been known for some time, dating from the original work of Frey and Kraut¹, that extracts of various tissues contain substances possessing definite pharmacodynamic properties, among which is the ability to cause marked relaxation and dilatation of the ureters. The exact mode of action is as yet not clear, but it appears to be entirely local, and is unaccompanied by systemic manifestations.

Carroll and Zingale² have studied the use of pancreatic tissue extract from a urological standpoint and state that its effectiveness has been demonstrated

*Depropanex, Sharp & Dohme.

in: (1) Renal colic, due to stone, stricture, kink and spasm. (2) Post cystoscopic colic. (3) In facilitating passage of a catheter beyond an otherwise impassable ureteral stone. (4) Instrumental removal of calculi in lower ureter.

We have been using for the past year a deproteinized pancreatic tissue extract which, because of its refinement over cruder extracts, has the advantage of causing less local irritation at the site of injection. Wright et al³, who used this preparation in the treatment of intermittent claudication, state that in over 1000 injections no untoward reactions were observed.

This extract is a saline solution of a chemically purified protein-free nitrogenous fraction derived from an acid alcohol extraction of bovine pancreas. On the basis of physiological tests it is said to be free from insulin, histamine and acetylcholine. Its solids content is approximately 2.5 per cent, including 0.5 per cent non-protein nitrogen, 0.9 per cent sodium chloride, 0.25 per cent phenol which is added as a preservative. The pH of the solution is approximately 6.5.

It is assayed by comparing its effect upon the arterial blood pressure of anesthetized dogs with that of a standard preparation. The standard preparation was adopted after it was shown that one cc. produced, in a large series of dogs, an average lowering in arterial blood pressure equivalent to the rise in arterial blood pressure produced by 0.01 mg. of epinephrine, in the same dogs. The standard is preserved by the lyophile process and stored in the dried state at five degrees C.

Because of the striking results which we have noted in those cases in which this extract has been used, we believe that a brief report of the following cases will be of interest:

CASE REPORTS

Case I—Girl seventeen years of age was referred with a diagnosis of appendicitis. At time of examination she complained of right sided pain and nausea. She was feverish, but no leucocytosis was present. On cystoscopic examination it was found impossible to enter the right ureter because of spasm.

Five cc. of Depropanex were administered intramuscularly at this time. Within ten minutes a No. seven French catheter was passed without difficulty, sixty cc. of urine being emptied from the kidney pelvis. Following repeated dilations the patient has apparently been relieved of all symptoms.

Case II—A forty-five year old male had suffered from repeated attacks of renal colic resulting from a stone lodged in the ureter at the pelvic constriction. The position of the stone had remained unchanged for two weeks. Following the intramuscular injection of five cc. of Depropanex, three No. five catheters were passed beyond the stone and left indwelling for twenty-four hours. At the end of this time another five cc. of Depropanex were given and the catheters

removed. The stone was passed spontaneously at the patient's next urination.

Case III—A woman thirty-three years of age had suffered from a stone two cm. in diameter which had lain at the left uretero-vesicular junction for several years without completely blocking the flow of urine from the left side. The left kidney was markedly hydronephrotic.

Following a ureteral meatotomy, ten cc. of Depropanex were administered intramuscularly. The stone was passed into the bladder, from which it was removed the following day.

Case IV—A twenty-seven year old male was seen suffering with renal colic. Ureteral catheterization was attempted without success. Five cc. of Depropanex were then given, and after a lapse of ten minutes it became possible to pass two No. five catheters beyond the stone. The catheters were then withdrawn and a stone about the size of a small pea removed at the same sitting.

We have also administered Depropanex in amounts of five cc. to thirty cases ten minutes prior to retrograde pyelography. In no case was post instrumental colic observed.

CONCLUSIONS

1. The use of a chemically purified deproteinized pancreatic tissue extract in four cases of renal colic and thirty cases having retrograde pyelography is reported.

2. This extract exerts a marked dialating effect upon the human ureter.

3. No local reaction or untoward effects were noted in this series of cases.

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At the request of the Surgeon General of the Army and Navy, the American Red Cross will extend its blood collection program to certain metropolitan cities on the Pacific coast and in the Midwest. At present seven eastern cities are engaged in the project of collecting and shipping blood by refrigerated express to a processing depot at Philadelphia where it is reduced to dry plasma form for the use of the Army or Navy. Arrangements are being worked out with biological laboratories in the Midwest and Pacific areas for processing blood collections received from the cities to be added.

Plans for extending the collection program were announced following completion of a "pilot" project in which blood donors of the seven eastern cities filled an initial request of the Navy for 15,000 donations. It was explained that most of these after being processed and hermetically sealed, already have been placed aboard U. S. fighting ships engaged in the Atlantic sea patrol.

"The present emergency requires that the Red Cross take every necessary step to provide as soon as possible an adequate supply of plasma for the Army and Navy—Some 200,000 donors will be needed to fill current requests of our military and naval forces. Extension of the collection program will enable the Red Cross to meet these requests.

President's Page

To the Members of The Kansas Medical Society:

Another Armistice Day has passed, a comparatively short span of years has brought the medical profession again face to face with the problems of war.

The depletion in our ranks will greatly add to our duties in serving the public at home. May we not in any manner shirk the added duties imposed upon us in this period of National emergency.

Neither must we as a Society even temporarily forget the problems of organized medicine in our State.

Truly we may view with pride the accomplishments of the past. Let us not be satisfied until the economic problems are solved statewide. Certainly through the guidance of our able committees a satisfactory solution of the patient-physician relationship may be maintained.

Through the many other committee activities, let us hope to build constructively in developing methods to control the ravages of accidents and disease. Efforts during this year are already bearing fruit and other accomplishments are in the making which will also in due time be recognized as milestones along the road of medical progress in Kansas.

Sincerely yours,

Clyde O. Blake, M.D.

EDITORIAL

THE DOCTOR AND HIS STATE MEDICAL JOURNAL

There is nothing more reassuring to the active doctor as he passes rapidly from one medical problem to another, than his recourse to reading. Medical journals are more important than text books to the physician who reads. Text books are valuable as sources of reference. The established habit of thoroughly reading medical periodicals forms a background of knowledge. Text books are usually out of date by the time they are published. Medical periodicals constitute a steady flow of current research, clinical study and the record of the application of new knowledge. To keep alive in any branch of medicine it is necessary to cultivate the habit of diligence in reading. An orderly mind will remember a great deal which is read. The possessor of such a mind, wishing to re-read some particular article, will know where to find it. He will have a file where he can put his hand on it. Reprints are obtained by writing to authors. An indexed file of reprints is a valuable adjunct to a doctor's private medical library.

We have reason to suspect that Kansas physicians read their Journal, and we are under the impression that likewise, in other states their own journals are read well. In going over our exchanges we are impressed by the high type of scientific material which they present each month. In fact the sustained high quality of medical literature published from month to month in the state medical journals compliments the high standard of medical practice throughout the United States. The medical periodicals of the specialties are necessary to those practicing in the special fields, but to the rank and file of the medical profession the medical journals published by the state medical societies form the supporting structure of current medical literature.

ARE WE HEALTHY?

Periodically some major event occurs which tends to renew public attention on health. The first World War awakened National interest by the astonishing discovery that, for the country as a whole, thirty-one per cent of the supposedly best age group of our men fell below the physical standards for active military duty as set up by the Draft Boards. By states, rejections varied from eighteen per cent to fifty-eight

per cent with Kansas in fifth place with twenty-one per cent.

Again today we are given statistics showing that approximately the same proportion of young men are being rejected. We try to rationalize and explain the lack of improvement in the intervening twenty-four years by saying that now our standards of physical fitness are higher and our technic of examination more refined. Perhaps this is true in some respects, but it does not explain why today three times as many have been rejected for defective vision and twice as many for ear defects as in 1917.

Good health is an intangible state that is difficult to define. For purposes of our discussion we may say that one is in good health if he is free from illness and structural defects, possessed of the physical and mental capacity to perform an average amount of work or other physical activity without undue fatigue and with enjoyment in the doing. Our measure of health is a composite one including an appraisal of physical structure, functional abilities and mental capacity and stability. By standards set up in each of these fields we can arrive at an interpretation of the physical and mental health of the individual in relation to the average.

Actually, what is the state of our health? We know that the average life expectancy for the child born today is sixty-two (62.78) years as compared with the life expectancy of forty-nine years in a child born in 1900. This has largely come about by the improvement in living conditions, in control of contagious disease and in advances in medicine. For example, the rate of infant mortality has been reduced fifty per cent in the past twenty-five years. Mass immunization of school children against diphtheria has greatly reduced the incidence, and correspondingly the resulting deaths and disabilities. Small pox has steadily declined in prevalence and escapes eradication only by the reluctance of some people to be protected by vaccination. Modern sanitary engineering has practically controlled typhoid fever. In communities having standard milk ordinances milk borne diseases have suffered a similar fate.

A study of the physical examination records of University of Kansas students gives use a picture of the health of this age group and a clue to the health of the families from which they come. We grant that this is a select group, both in age and income level. Data from other colleges is comparable, and shows a higher proportion of these young men measuring up to the Selective Service requirements than is found in the general population at the same age level. For example, here at the University of Kansas eighty-three per cent of the men are phys-

ally fit for military service whereas approximately sixty-seven per cent of the men called for examination by the Kansas Selective Service Boards have been passed.

Analyzing the data on students entering the University of Kansas this fall we find that nine per cent are ten pounds or more over the maximum weight for their height and age; 2.5 per cent of the women and eight per cent of the men are an equal amount below the minimum standards. Only seventeen per cent have no visible teeth defects. The remainder average slightly more than four defective teeth each. Thirty-six per cent have impaired vision. Approximately thirty-five per cent show positive reactions to the tuberculin test, but only 0.43 have evidence of secondary (or adult) type of tuberculosis and only 0.16 per cent have active tuberculosis.

Many of these defects are correctable in this group and preventable in future generations. Dental defects and abnormalities of weight and growth depend largely upon diet. Diet of the mother before the child is born and diet of the growing child. Much of the defective vision is the result of childhood infectious diseases, poor nutrition and improper use of the eyes. Infection accounts for most of the ear and many of the nose defects, altho some of the nasal abnormalities are structural or the result of injury. Early in life many of these structural anomalies can be corrected but by the time college age is reached the opportunity is often past. When infectious diseases or congenital abnormalities are the causes of poor response of the heart and circulatory system to exercise, little can be done, but in the many cases where the cause is malnutrition, use of stimulants or lack of conditioning exercise, considerable improvement may be expected.

We have at our disposal the means of greatly improving the general physical efficiency and health of many who cannot measure up to the optimum standards. We can achieve this improvement by taking greater interest in nutrition, by recognizing and using the known methods of protection against preventable diseases, by obtaining adequate rest and by developing physical stamina through work and recreational activity.—A radio broadcast over station KFKU on October 10, 1941, by Ralph I. Canuteson, M.D., Director, Health Service, Watkins Memorial Hospital, University of Kansas.

Every physician is his own public relations counsel, and every contact he makes with his patients and friends hinders or advances the position of himself and his colleagues in the hearts and minds of the public.—Bulletin of the Jackson County Medical Society.

MEDICAL SCHOOL

THE ACUTE STAPHYLOCOCCAL INFECTIONS OF THE KIDNEY

W. G. Gordon, M.D.*

Kansas City, Kansas

The common renal infection, known variously as acute pyelitis or acute pyelonephritis, is a clinical picture well known to all who practice medicine. This type of infection may be due to any organism but is most commonly caused by the colon bacillus. It is characterized by renal pain, chills, fever, and usually symptoms of bladder irritation—frequency and dysuria. There is an abundance of pus in the urine, and staining of the urinary sediment will reveal the offending organism. Such infections are often called "ascending" pyelonephritis, since the most common belief is that the infection ascends to the kidney, either lymphogenously or via the urinary tract itself.

The present description, however, is concerned with an entirely different and much more rare type of renal infection; namely, the acute hematogenous staphylococcal infection of the kidney, or, more conveniently, the "Coccus Kidney." This has, because of its rarity, received much less recognition in the literature, and usually goes undiagnosed because the examiner fails to consider it. This renal infection, however, is of considerable importance because in its acute stage, it may present the picture of an acute surgical abdomen with an entirely normal urine. It is also important to recognize this type of acute renal infection because about ten per cent go on to develop complications which require early surgical intervention.

The pathogenesis of the Coccus Kidney resembles that of renal tuberculosis since the causative organism reaches the renal parenchyma by the blood stream from a distant focus and because the early lesion is in the cortex of the kidney. Active focal staphylococcal infections, infections such as furuncles, carbuncles and osteomyelitis, may be demonstrated in thirty-five per cent of the acute cases. The causative organism is the staphylococcus aureus in the majority of cases. These organisms establish single or multiple foci of infection in one or both kidneys, and the onset of this infection is heralded by a very characteristic clinical picture.

*From the Department of Surgery, University of Kansas Hospitals.



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¹Jeffcoate, T. N. A.: *Brit. Med. J.* 2:671 (Sept. 30) 1939.

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The patient develops, rather suddenly, pain over the affected kidney or, over both kidneys if the disease is bilateral which is much more rare. This pain is seldom as severe as renal colic but tends to be dull and aching and is not always sharply localized. Fever varying from 101 degree to 105 degrees is usual and may be accompanied by chills. Leucocytosis ranges from 12,000 to 20,000 W.b.c. per H.P.F. But an interesting and important difference occurs here between the "coccal" kidney and the commoner "ascending" infection. In the coccal kidney, the urine is at the onset entirely normal and there is never frequency of urination or dysuria. This is because the infection in the kidney is still cortical and has not communicated with the collecting tubules. The urine, therefore, does not reflect the renal infection.

It is apparent that unless this specific entity is considered at this time, since the urine is negative, that an erroneous diagnosis of a surgical abdomen may well be made. On the right side, retro-cecal appendicitis may be misdiagnosed or one may suspect acute cholecystitis or acute hydronephrosis. Renal colic, often diagnosed under this circumstance, should not produce this amount of fever.

After twenty-four to forty-eight hours, showers of cocci begin to appear in the urine, and it is imperative that repeated stains be made of freshly obtained urine, since the cocci may appear only intermittently, and until they are demonstrated, the diagnosis cannot be confirmed. Obviously, such specimens must be second glass specimens in the male and in the female must be obtained by catheter. After three to five days, pus as well as cocci appears in the urine. After a week, a secondary infection with the colon bacillus occasionally is superimposed.

THE COURSE OF THE DISEASE

Even before the advent of the sulfonamide substances, nine patients out of ten became completely well within seven to ten days with complete disappearance of symptoms, fever and renal infection. This is probably because the renal cortex which has an extremely generous blood supply, is able to resolve the tiny, almost microscopic cortical abscesses. However, in ten per cent of the patients, one of the two complications of acute coccus kidney results: namely, (1) cortical abscess or (2) perinephric abscess. One may say definitely then, in any patient in whom there persists significant fever and renal pain ten days after the onset of the acute coccal kidney, one complication or the other is present and prompt surgical intervention is indicated.

A further discussion of the complications is worth while since the patient is frequently not seen until the complication is present.

CORTICAL ABSCESS

Cortical abscess is the less common of the two complications. It occurs when the microscopic ab-

scences of the original infection fail to be resolved by the defensive mechanism of the kidney. In this event, the complications. It occurs when the microscopic abscesses of the original infection fail to be resolved by the defensive mechanism of the kidney. In this event, the abscess increases in size and the patient continues to have flank pain and fever. If several cortical abscesses are present, the condition is referred to as "Carbuncle of the Kidney." It is well to remember that the abscess may wall itself off and the urine will be normal in some cases.

Diagnosis is established by obtaining a history of acute staphylococcal infection of the kidney with persistence of the fever and flank pain. The pyelograms vary in appearance but may be like those of renal tumor if there is a walled off cortical abscess. Other cases may show communication of the abscess cavities with the renal pelvis. Treatment consists of draining the cortical abscesses through a loin incision. Nephrectomy is rarely indicated since the kidney shows remarkable reparative powers once the abscess is drained. It is also well to remember that occasionally the disease is bilateral in which event, nephrectomy would be a disaster.

PERINEPHRIC ABSCESS

The second complication is perinephric abscess. This occurs more commonly than cortical abscess. In this situation, the infection penetrates into the perinephric fat and causes a severe perinephric infection with abscess formation. Again the urine is often entirely normal since the process in the kidney heals completely. The complication is suspected if fever persists for ten days after the acute coccal infection. Perinephric abscesses are overlooked as a cause of fever since the examiner may be misled by the absence of urinary findings. The diagnosis is confirmed in suspected cases by certain physical and roengenographic signs. The physical signs are tenderness and spasm in the affected flank, occasionally a palpable mass, and, if the abscess is very large, pitting edema of the suprajacent skin. Paranephro bronchial fistula has been reported in neglected cases where the infection perforates through the diaphragm. Psoas signs may occur where the psoas muscle is irritated. The x-ray signs are: (1) obscuration of the psoas shadow; (2) sometimes scoliosis with the concavity toward the affected side, and; (3) fixation of the kidney on respiration.

Treatment of this type of paranephric abscess is simply incision and drainage. Since the kidney has healed, it should not be disturbed.

SUMMARY

The rather rare hematogenous staphylococcal infection of the kidney is a metastatic infection from a focus elsewhere in the body. In its incipiency, a characteristic clinical picture is presented but the

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AGE—THREE MONTHS

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Karo syrup.....3 tbs.
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AGE—FOUR MONTHS

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Karo syrup.....3½ tbs.
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(3) The total caloric value of the formula should be approximately 50 to 55 calories per pound (110 to 115 calories per kilo) of body weight per day.

(4) The amount of water added to the formula will be two to three ounces per pound (130 to 200 cc per kilo) of body weight per day; and the amount of water added to the formula for the 24-hour period depends upon the degree of dilution required to render the mixture digestible.

(5) The amount of formula offered at a feeding during the first few months is expressed by the rule—Age in months plus two ounces at four-hour intervals."

KUGELMASS: "Newer Nutrition in Pediatric Practice." 1940.

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urine is normal. After twenty-four to forty-eight hours, the urine begins to reflect the renal pathology and the diagnosis may be confirmed. Ninety per cent of the cases recover completely and spontaneously within ten days. Persistence of fever and flank pain after ten days indicates that either a cortical abscess or a perinephric abscess has formed and surgical interference is then indicated.

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TUBERCULOSIS CONTROL

PREVAILING TUBERCULOSIS INFECTION RATE

Kurt E. Lande

Georg Wolff

In 1900 Naegeli published a careful report of 508 autopsies. Of the adults over eighteen years of age ninety-three per cent showed healed, inactive or active tuberculous lesions in the lungs. Only seventeen per cent of those under eighteen yielded positive findings. Other investigators substantiated these findings and in the early years of this century the belief was prevalent that all adults had at some time suffered an invasion by the tubercle bacillus.

Opie as late as 1917 found positive evidence of infection in all of fifty autopsies on adults and in nearly twenty-four per cent of a group of ninety-three children, the latter showing a far higher figure in the adolescent years. It was these findings that led Opie to remark, "Almost all human beings are spontaneously 'vaccinated' with tuberculosis before they reach adult life."

In 1922 Wason reported positive findings in eighty-two per cent of his autopsies and in 1925 Lambert and de Castro Filho reported a rate of 72.8 per cent in a large series from Brazil. As late as 1927 Todd still found evidence of tuberculous infection in sixty-nine per cent of autopsies done in Edinburgh on patients who had died of some cause other than tuberculosis. Such evidence indicates rather clearly that decline in infection rate has not kept pace with mortality from this disease.

The present study was carried on at the Washington County Hospital in Hagerstown from September, 1938, to August, 1940, all autopsies being performed by the same pathologist. There were 176

autopsies during this period which represented forty-five per cent of the deaths which occurred. Eleven of these were rejected because they were not complete postmortems leaving 165 which are included in this report. Cases of active tuberculosis are not admitted to the hospital. The population of Washington County is semi-rural and most of the patients were long residents, from all classes of society and of the white race (only four Negro adults in the group).

Thirty-two of the 165 necropsies were done on children and 133 on adults. For the whole group positive findings were recorded in sixty-five or 39.4 per cent which is just half of Naegeli's findings, 79.9 per cent, when he included all ages.

Considering only the adult group of 133 cases, the positive evidence of infection yielded 47.4 per cent, again strikingly near one-half the number of adults found to be infected by the earlier researches of Naegeli, Burkhardt, Opie and others. In this series there were five cases where infection was suspected but could not be proved pathologically. If these are included the percentage would stand at approximately fifty.

This finding of almost fifty per cent of positive tuberculosis among an unselected group of a semi-rural population indicates that the frequency of tuberculosis is still sufficient to be alarming. If one assumes this experience as typical of the country as a whole, which seems reasonable, we must still face the fact that at least half of all adults have suffered invasions by the tubercle bacillus active enough to leave discoverable scars. This is disconcerting in face of the far greater fall in the death rate from the disease.

At the same time there is some compensation in the discovery revealed by this study that only one-half as many people who have suffered tuberculous infection actually die of the disease as was the case forty years ago. The infection rate has been reduced to fifty per cent, the mortality to twenty-five per cent of that in 1900. A number of factors have probably contributed to this gratifying preponderance in the decline of the death rate. Better sanatorium care and the management of cases has undoubtedly made a large contribution. The fact that lessening of the infection rate has apparently shown acceleration in the past fifteen or twenty years brings comfort both to those engaged in the preventive and therapeutic aspects of tuberculosis control. A fifty per cent reduction in the reservoir of spreaders must certainly mean that fewer contact cases are today submitted to massive and repeated doses of infected material. The contribution of compression therapy and surgery to this result can but be inferred. Those who advocate freer use of these measures certainly

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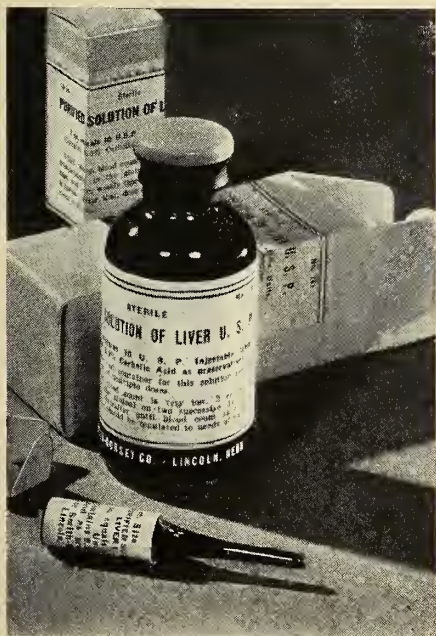
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would seem to have little for which to apologize in the evidence presented by this study.

However, there are other factors in the picture which perhaps deserve first mention. Isolation is the time-honored scheme for the control of epidemic, infectious disease. It is a significant coincidence that during the period when tuberculosis mortality was reduced to one-quarter its 1900 level and infection rate cut by fifty per cent, the sanatorium beds in this country increased from about 6,000 to 100,000. It would be idle not to recognize this prophylactic procedure as an outstanding influence in lessening opportunity for infection among the general public.

The result of this procedure would have been far more striking had it been possible to arouse the medical profession to its responsibility in finding the early case and effecting its immediate isolation. Unfortunately, this is one of the weaker links in our control program. From three-quarters to four-fifths of all cases admitted to sanatoria are still found to be in the advanced stages of the disease, already probable spreaders of the infection to others. More professional education, both undergraduate and post graduate is still needed to impress upon physicians how truly further progress in tuberculosis control rests in their hands.

Popular health education and school hygiene have also played their parts in reducing opportunities for infection. Beginning with teaching the infectivity of sputum, the transference of disease through common utensils, uncleanliness in restaurants, the menace of infected food handlers, instruction has proceeded to the point where even an open case is of relatively little danger to his fellows if both he and they will exercise the prophylactic measures now recognized as largely effective.

Finally better housing, elimination of industrial hazards, more applied knowledge of the laws of nutrition, and a growing consciousness of the significance of personal and community hygiene, all have played their part in reducing the transmission of tuberculous infection from case to contacts.

A highly significant factor in this study is the observation that reduction of infection as shown at autopsy has been at least as rapid among infants and children as among adults. These younger members of society can make no personal contribution to their own protection. They must rely on that of others, nurses, teachers, parents and relatives. Cutting their infection rate in two as well as that of their elders is clear proof that a better informed public is making an increasingly effective fight against spread of this disease.

Frost in discussing the eradication of tuberculosis wrote as follows: "Tuberculosis also differs from the other directly transmitted respiratory tract infections

in that its mortality has declined consistently for the last fifty years or more and continues to decline in every part of this country for which adequate statistics are available. It is not directly established by comparable statistical evidence that there has been a proportionate decrease in the prevalence of infective cases of the disease, taking into consideration not only the number of cases but duration of the open stage. However, there appears to be no good reason to doubt that the prevalence of open lesions effective in spreading the tubercle bacillus has diminished progressively, and continues to diminish in each considerable period of time."

However, it must not be overlooked that, according to present autopsy records, the reservoir of adults infected with tuberculosis at one time or another in their lives still amounts to half of the population. Therefore, tuberculosis can still flare up again whenever external conditions turn to the worse for the bulk of the people. Without such a reverse there exists the hope that further efforts in the campaign against tuberculosis will some day lead to a complete eradication of the white plague.—From *Tuberculosis Abstracts*, November, 1941. Frequency of Tuberculous Lesions at Autopsy by Kurt E. Lande and Georg Wolff, *Amer. Rev. of Tuber.*, Vol. XLIV, No. 2, Aug., 1941.

NEWS NOTES

MINUTES

The following are minutes of recent committee meetings:

COMMITTEE ON MATERNAL WELFARE

A meeting of the Committee on Maternal Welfare was held in Wichita on September 21.

Members present were: Dr. Ray A. West, chairman; Dr. Letteer Lewis, Dr. Porter D. Brown, Dr. H. C. Clark, Dr. C. O. Merideth, Dr. H. R. Ross, Dr. F. E. Wallace, Dr. L. A. Calkins and Dr. F. N. White. Others present were: Dr. C. D. Blake, Dr. St. Clair O'Donnell, Dr. R. H. Maxwell, Dr. Robert Sohlberg and Mr. C. G. Munns.

The minutes of the last meeting of the committee were read and approved with the following exception: That the reference in the minutes pertaining to the plan of mothers' training classes in Cleveland should read "1.1 per thousand live births for persons receiving the lectures as against a rate of 4.0 for the general area" instead of "the maternal death rate dropped from four per thousand live births to 1.1 per thousand."

Dr. Brown reported that the scientific brochure prepared by the committee had been completed and distributed to all Kansas doctors of medicine. Dr. West complimented the subcommittee which handled this activity for its excellent work and stated that he felt the brochure had been well received by the membership.

The next item of discussion pertained to the rules for handling of obstetrical cases and the method of conducting mothers' training classes which the committee at its last meeting had requested be transmitted to the Council for consideration and approval if desired. Clarence Munns

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reported that available time at Council meetings since that date had not permitted these items to be discussed, but that it was believed they could be presented at a meeting of the Council to be held during November, 1941. The committee thereupon expressed its hope that the Council would find it possible to approve both of these matters, in order that certain contemplated programs might be based thereon.

Dr. Clark reported that his subcommittee on incubators had no further report to make at this meeting.

Dr. West presented a letter from the American Committee on Maternal Welfare describing the Second Congress on Obstetrics and Gynecology which is to be held at St. Louis, Missouri, on April 6 to 10, 1942, and requesting that Dr. West appoint a Kansas committee to assist in obtaining membership in the organization and attendance at the above meeting from this state. Dr. West reported that the following committee composed of members of the Kansas Obstetrical and Gynecological Society had been appointed for this purpose: Dr. Porter Brown, Dr. L. R. Pyle, Dr. F. N. White, Dr. Howard Rush, Dr. Robert Sohlberg, Dr. L. E. Haughey, Dr. L. A. Calkins, Dr. Robert H. Maxwell, Dr. St. Clair O'Donnell, Dr. J. M. McGrew, Dr. Leteer Lewis, Dr. C. O. Merideth, Dr. H. C. Clark, Dr. H. R. Ross, Dr. Walter Weidling, Dr. F. L. DePew, and Dr. A. L. Hilbig.

Dr. Calkins commented that this is an excellent meeting, that Kansas should be well represented at the event, and that possibly the above committee should appoint subcommittees in various parts of the state to assist in interesting Kansas physicians in attending the meeting.

Dr. West, Dr. Ross and Dr. Calkins discussed the information on maternal mortality in Kansas obtained from the questionnaires prepared by the committee and forwarded by the Kansas State Board of Health to physicians attending cases wherein maternal deaths have occurred. It was the feeling of the committee that the detailed information obtainable from questionnaires of this kind could provide much assistance in analyzing the causes of Kansas maternal deaths and in making plans for further reduction of maternal mortality in the state. The following action was taken in that regard upon a motion made by Dr. Calkins, seconded and carried:

1. That the committee commends the Kansas State Board of Health for having adopted the plan of obtaining detailed questionnaire data on all maternal deaths.

2. That the committee believes this activity should be continued in the future.

3. That the committee feels it would be of particular value for means to be devised wherein questionnaire information of this kind can be obtained for each maternal death.

4. That the committee also feels there might be advantages in the Kansas State Board of Health appointing a committee of three physicians, whose work is largely limited to obstetrics and who would be willing to meet frequently, to analyze the data obtained from the questionnaires, to prepare statistics and correlate findings thereon, to prepare an annual report on this subject and to make recommendations wherein further reductions in maternal mortality can be achieved.

5. That this committee will be willing to supply assistance of this kind if the State Board of Health so desires.

6. That the above recommendations and comments be forwarded to the Kansas State Board of Health.

The next item of discussion pertained to post graduate courses on obstetrics and maternal welfare. Dr. Ross reported that the Kansas State Board of Health will have

funds available for the presentation of additional courses of this kind and that the Board would appreciate receiving the recommendations of the committee as to the type of courses which should be presented in the future. Dr. Merideth reported that the Kansas Obstetrical and Gynecological Society in cooperation with the Kansas State Board of Health is planning to present programs on obstetrics and gynecology at various county medical society and district meetings; that the first meeting of this kind is to be held at Salina on October 2; that arrangements for six other similar meetings have been made; that the county medical societies seem to be interested in this plan, and that this type of post-graduate instruction might tend to be more advantageous for the next several years than the circuit type of post-graduate courses. Upon a motion made by Dr. Brown, seconded and carried, it was agreed that the above plan of post-graduate instruction continue to be experimented with, that a subcommittee of the committee be appointed to study different types of post-graduate activity which might be recommended to the Kansas State Board of Health, and that the subcommittee present a report on this subject at the next meeting of the committee.

Upon a motion by Dr. Brown, seconded and carried, it was agreed that if the Council desires to approve the program of mothers' training classes, and educational activities on that subject should be commenced with lay groups. The suggestion was also made that extensive activity in this direction should be devoted to negro groups.

Upon a motion by Dr. Calkins, seconded and carried, it was agreed that a subcommittee of the committee should be appointed to cooperate with the Kansas State Board of Health in selecting and presenting exhibits on maternal welfare at various state, district, and local lay gatherings.

Upon a motion by Dr. Calkins, seconded and carried, the chairman of the committee was requested to prepare a desk card on obstetrical care for distribution to Kansas physicians.

The possibility of recommending monthly payment plans for obstetrical cases was tabled.

The question was asked as to whether it will be possible for the Kansas State Board of Health to include a statement pertaining to prenatal Wassermann examinations on birth certificates filed by physicians. Dr. Ross was asked to report on this possibility at the next meeting of the committee.

Adjournment followed.

COMMITTEE ON MEDICAL SCHOOLS

A meeting of the Committee on Medical Schools was held at the University of Kansas School of Medicine on October 8, 1941.

Members present were: Dr. Fred J. McEwen, Wichita, Chairman; Dr. Warren R. Morton, Green; Dr. Clay E. Coburn, Kansas City; Dr. Alfred O'Donnell, Ellsworth; Dean H. R. Wahl, Kansas; Dr. F. E. Dillenbeck, ElDorado; Dr. O. W. Longwood, Stafford; Dr. L. R. McGill, Hoisington; and Dr. Fred E. Angle, Kansas City. Others present were Dr. C. D. Blake, Hays; Dr. O. O. Stoland, Lawrence; and Mr. C. G. Munns.

The minutes of the last meeting were read and approved.

Dean Wahl reported that the Journal has contributed space for an advertisement pertaining to the library of the University of Kansas School of Medicine, that this is being regularly published, and that he believes it will be of

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FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Informal Course available every week.

GYNECOLOGY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Clinical and Special Courses starting every week.

OPHTHALMOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

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assistance in promoting the use of the library by the members of the Society. He reported also that arrangements have been made through the Wyandotte County Medical Society to have its present library and the funds available for book purchases from its occupational tax law to be transferred to the medical school, and that this will aid materially in providing additional library facilities.

Dr. Stoland reported plans are being considered for remodeling the present geology building at the University of Kansas, in Lawrence, and for housing certain portions of the Lawrence division of the medical school therein after the geology department is transferred to the industrial building which is to be constructed. Dr. Longwood was asked to represent the committee in providing any help possible for it to provide in this connection.

Dean Wahl described the courses on medical economics which have been presented at the medical school during recent years, and stated he intended to discuss the plans for this year's course with Dr. F. L. Loveland, of Topeka, within the near future. The committee offered its assistance on this subject in any way desired.

Dean Wahl commented on the advantages which exist in being able to place undergraduate students with practicing physicians during summer periods and school holidays and requested suggestions as to how this program might be expanded. A suggestion was made that the Councilors of the Society could assist in placing students for this purpose, and that it believed they will be glad to assist on this in any way they can.

The post graduate course presented each year at the medical school was discussed, and the committee offered to assist in any way desired in promoting interest and attendance at this event.

Dean Wahl described the plans which are being considered for the construction of a student dormitory and union building at the Kansas City division of the medical school. Explanation was made that the construction of a building of this kind is possible under a law passed at the last session of the Legislature, and that the plan being considered includes arrangements for part of the financing of the building to be obtained from a bond issue and part from alumni and other contributions. Dean Wahl stated the assistance of the committee would be helpful in obtaining contributions for this purpose from members of the Society. The committee offered its help in any way desired.

Student admittance was then discussed. Dean Wahl and Dr. Stoland reported on the present number of students enrolled at the medical school, the procedures utilized for the selection of students, and the plans which are being made to increase facilities in order that additional students may be accepted.

The committee then had lunch as guests of the medical school, and following this Dean Wahl accompanied the committee on a tour of the school.

Adjournment followed.

OSTEOPATHS

Mr. E. H. Hatcher, the attorney for the Kansas State Osteopathic Association, recently filed a motion with the Kansas Supreme Court for rehearing of the cases of State of Kansas, ex rel., vs. C. V. Moore and the case of State of Kansas, ex rel., vs. O. E. Muecke, in the Barber and Pratt District Courts respectively, upon which an opinion was handed down by the Court on October 11.

The motion for rehearing states that the osteopaths believe the court is in error in its opinion; that osteopaths desire to practice forms of medicine and surgery in addition to osteopathy; and that the osteopaths wish to have an opportunity to re-argue the case.

The Supreme Court has not as yet acted upon the motion.

APPOINTMENT

Dr. C. D. Blake recently announced the appointment of Dr. Walter Stevenson of Norton as chairman of the Society Committee on Medical Economics.

Dr. Stevenson takes the place of Dr. Alza M. McDermott of Ellis who formerly was the chairman of this committee and who has moved to California.

BOARD OF HEALTH

Two announcements of interest were made by the Kansas State Board of Health during the past month:

Mr. Roy Oxendale, who formerly was Topeka representative of the United Press, has been employed by the Kansas State Board of Health to serve as director of a new division on public health information. It is planned that this division will engage in extensive lay educational programs pertaining to exhibits, movies, pamphlets, radio programs, news releases and similar activities on public health.

Governor Payne H. Ratner has made arrangements for the division of food and drug, milk sanitation, director of local health service, director of public relations, director of health education, the accident statistician and some of the division of vital statistics to occupy space in the State House formerly occupied by the State Department of Vocational Education, in order that the crowded conditions which have existed in the Board of Health offices may be relieved. The Board of Health, therefore, now has two separate offices in the State House and considerable space in the National Reserve Building in Topeka.

SECRETARIES CONFERENCE

The following program was presented at the annual Conference of Secretaries of Constituent State Medical Associations sponsored by the American Medical Association and held in Chicago, on November 14 and 15: Address—Frank H. Lahey, President of the American Medical Association; "The United States Army and Medical Preparedness"—James C. Magee, Surgeon General of the United States Army; "The Federal Security Agency and Medical Preparedness"—Watson Miller, Assistant Administrator of the Federal Security Agency; Address—Fred W. Rankin, President-Elect of the American Medical Association; "Social Security Medical Problems in Illinois"—Charles H. Phifer, President of the Illinois State Medical Society; Principles Involved in Medical Service and Group Hospitalization Plans—Stanley B. Weld, Editor-in-Chief of the Connecticut State Medical Journal—Peter Irving, Secretary of the Medical Society of the State of New York; "Industrial Health: Progress and Prospects"—C. M. Peterson, Secretary of the Council on Industrial Health of the American Medical Association; "How Can the State Medical Journal Best Serve Organized Medicine?"—Wingate M. Johnson, Editor of the North Carolina Medical Journal; "The Responsibilities of the Editorial Staff of a State Medical Journal"—Robert N. Nye, Editor of the New England Journal of Medicine; Address—Irvin Abell, Chairman of

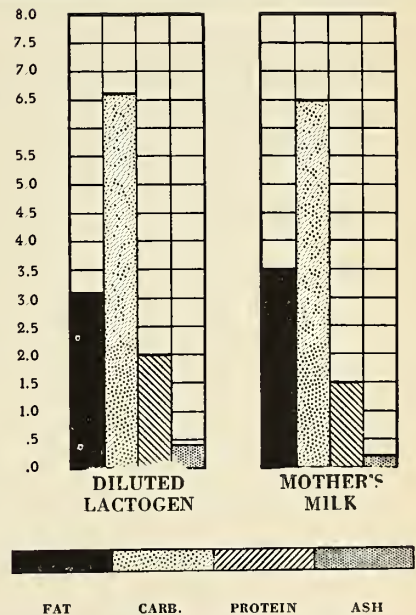


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Clinical Pediatrics, p. 156.



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the Committee on Medical Preparedness of the American Medical Association and Chairman of the Health and Medical Committee of the Federal Securities Agency; "The Role of the Medical Profession in the Selective Service System"—Lewis B. Hershey, Director of the Selective Service System; "Medical Aspects of Civilian Defense"—George Baehr, Chief Medical Officer of the Office of Civilian Defense.

Representatives from Kansas who attended the meeting were: Dr. C. D. Blake of Hays, Dr. John M. Porter of Concordia, Dr. L. E. Eckles of Topeka, Mr. Jack Austin of Wichita, and Mr. C. G. Munns of Topeka.

REHABILITATION

The Kansas State Board of Health is sponsoring a program wherein assistance will be provided in the rehabilitation of selective service registrants who have been rejected for military service by reason of physical disabilities.

Mr. George Lerrigo, who is the son of Dr. C. H. Lerrigo, Executive Secretary of the Kansas Tuberculosis and Health Association and who has been trained in rehabilitation work, will be the director of the program.

Activity is presently being commenced on the program in the preparation of studies and statistical information and in advising registrants who are afflicted with diseases of the lungs and with venereal disease as to their need for medical assistance. It is planned that the program will be extended into other fields as soon as additional facilities make that result possible.

The program will be operated in conjunction with various Society committees on matters of state-wide interest and with the county medical societies on a local basis.

HOSPITAL MEETING

The Kansas Hospital Association held its annual meeting in Topeka on November 12-13.

The subjects and speakers on the program were: "Problems of the Dietitian in a Small Hospital"—Martha Richardson, A.B., M.S., Dietitian, Wm. Newman Memorial Hospital, Winfield; "Problems of the Medical Staff"—T. R. Ponton, M.D., Director Hospital Management, Chicago, Illinois; "Some Problems of the Nursing Schools in Kansas"—Dorothy Jackson, R.N., State Inspector, School of Nursing, Emporia; "The Management of Psychiatric Patients in a General Hospital"—Lewis L. Robbins, M.D., The Menninger Clinic, Topeka; Roundtable—Discussion supervised by T. R. Ponton, M.D., Editor, Hospital Management, Chicago, Illinois; "Relation of the Radiologist to the Hospital"—C. H. Warfield, M.D., Wichita; "Problems Facing Our State"—Senator Kirke W. Dale, Arkansas City; "Voluntary Action Works"—Ray F. McCarty, Director, Group Hospital Service, Inc., St. Louis, Missouri; "America Faces a World Crisis"—Bertram W. Maxwell, Professor of Political Science, Washburn Municipal University, Topeka.

A business session was also held wherein the possibility of instituting a group hospitalization program in this state was discussed.

BLIND PROGRAM

Dr. H. L. Kirkpatrick, Supervising Ophthalmologist for the Kansas State Board of Social Welfare, recently issued the following cumulative report as of September 30, 1941,

on examination and treatment furnished under the Kansas blind program:

PROGRESSIVE REPORT

Total number of individuals examined.....	4160
No. of eye examinations approved for A.B.	2420
No. of individuals ineligible for A.B. thru Ex.	1734
No. of Re-Ex. made and fee allowed.....	410

RESTORATION OF SIGHT

Total number of cases eligible for treatment	1051
No. of cases in which treatment has been completed	516
No. still elig. for A.B. after treatment..	197
No. ineligible for A.B. after treatment	319
No. of cases did not rec. tr. for unknown reasons	246
No. of cases did not rec. tr. because of: (Death, refused treatment, not physically able, etc.).....	163
No. of cases under treatment.....	126
No. of completed treatment cases during September	10
Cases still eligible	5
Cases ineligible	5
Total Amount paid on cases complete this month	\$ 844.86
Doctors' Fees	65%
Hospital Fees	26%
Optical	5%
Drugs	2%
Total amount paid for Treatments since initiation of program	\$58,943.70

PREVENTION OF BLINDNESS

Total number of cases eligible for treatment	528
No. of cases in which treatment has been completed	314
No. elig. for A.B. after treatment.....	4
No. still inelig. after treatment	310
No. of cases did not rec' tr. for unknown reasons	77
No. of cases did not rec' tr. because of: (Death, refused treatment, cases inactive for public assist., etc.)..	25
No. of cases under treatment.....	112
No. of completed treatment cases during the month.....	5
Cases eligible for A.B.....	1
Cases ineligible	4
Total amount paid on cases completed this month	\$ 185.45
Doctors' fees	82%
Hospital fees	12%
Optical	2%
Drugs	3%
Total amount paid for treatment since initiation of program.....	\$16,024.23

RESIGNATIONS

Dr. Richard F. Boyd who has been Director of Local Health Services of the Kansas State Board of Health during the past four years, recently resigned his position. Dr. Boyd will move to Milwaukee, Wisconsin, where he will become Regional Medical Officer for the Farm Security Administra-

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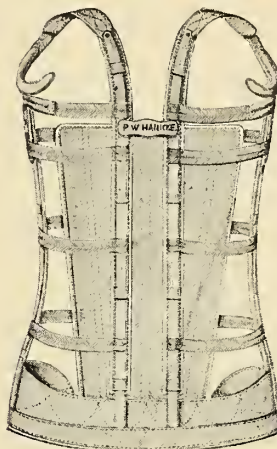
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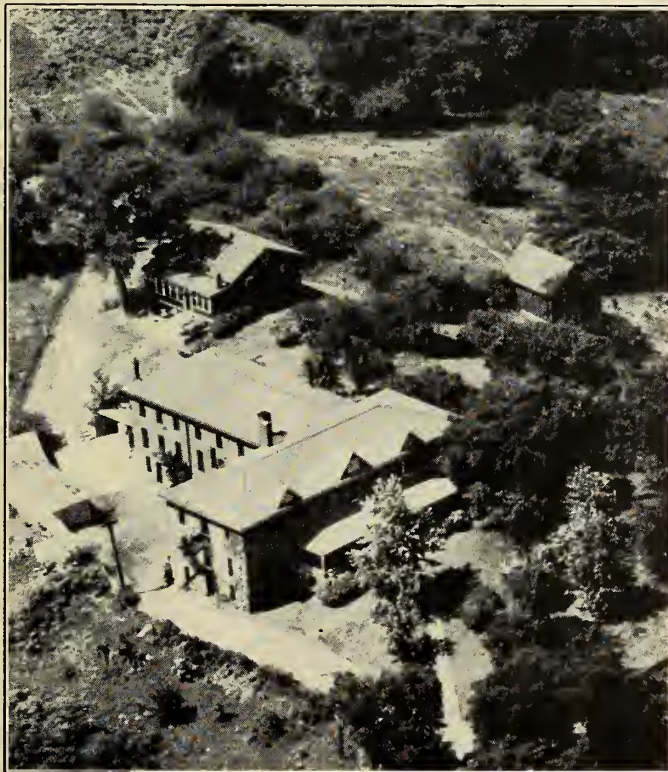
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Dr. C. B. Stephens who has been city health officer of Topeka for the past five years and Dr. Ragnar T. Westman who has been city health officer of Kansas City since 1939 also recently resigned their positions in that capacity.

MEMBERS

Dr. W. M. Mills of Topeka was elected as Governor of the American College of Surgeons at the annual meeting of that organization held in Boston, Massachusetts on November 3-7. Other members who attended from Kansas were as follows: Dr. C. F. Taylor of Norton; Dr. Cecil Snyder of Winfield; Dr. L. W. Reynolds of Hays; Dr. T. P. Butcher of Emporia; Dr. Ray West of Wichita, Dr. M. B. Miller of Topeka, and Dr. G. O. Speirs of Spearville.

Dr. Paul E. Craig of Coffeyville was a speaker at the meeting of the Mississippi Valley Medical Editor's Association held in Cedar Rapids, Iowa, on October 1. Dr. Craig spoke on "Science and Art in Medical Writing."

Dr. Benjamin G. Dyer formerly of Topeka has located in Manhattan, where he will be associated with Dr. L. G. Balding.

Dr. H. O. Loyd, son of Dr. Perry A. Loyd of Salina, who was formerly in Topeka, is now located in Salina. Dr. Loyd will also practice in Culver two days each week.

Dr. J. A. McLaughlin has returned to Greensburg, after serving for some time as a lieutenant in the Medical Reserve Corps of the Army at Lake Itaska, Minnesota.

The article on "Treatment of Cerebral Palsy" by Dr. M. E. Pusitz of Topeka which was published in the February issue of the Journal is to be re-printed in the Spastic Review, which is published in Wichita.

COUNTY SOCIETIES

The Franklin County Medical Society held a meeting in Ottawa on October 29. Speakers were Dr. F. C. Beelman of Topeka, who spoke on "The Program and Policies of the Kansas State Board of Health" and Dr. Charles A. Hunter of Topeka, who spoke on "Public Health Laboratory."

The Lyon County Medical Society held a meeting in Emporia on November 4. Dr. Frank Fonnannon of Emporia gave a paper on "Perforated Peptic Ulcer," using slides for the illustration of his talk.

The Pratt County Medical Society held a dinner meeting in Pratt on October 24, with the members of the Pawnee County Medical Society as guests. Dr. James W. Shaw of Wichita spoke on "The Physician and the Insurance Agent"

and Dr. C. A. Hellwig of Wichita spoke on "Medical Illustrations."

The Sedgwick County Medical Society held a meeting in Wichita on November 4. Dr. Frank R. Teachenor of Kansas City, Missouri, spoke on "Head Injuries."

The Shawnee County Medical Society held a dinner meeting in Topeka on November 3. Dr. Graham Asher of Kansas City, Missouri, spoke on "Clinical Factors that Influence Digitalis Administration."

The Wyandotte County Medical Society held a symposium on Therapy at the meeting in Kansas City on October 21. Speakers were: Dr. Alfred Steinzeig of Kansas City, who spoke on "Vitamine B Therapy"; Dr. D. N. Medearis of Kansas City, who discussed "Vitamine Requirements of Children"; Dr. Mahlon Delp of Kansas City, who spoke on "The Use of Cevitamic Acid in Treatment of Post Arsphenamin Dermatitis"; Dr. L. L. Bresette, Dr. Fred E. Angle, and Dr. H. W. Day, all of Kansas City, who discussed the papers.

The Wilson County Medical Society had as their guests the members of the Auxiliary of that county at a steak dinner at the Wilson County Hospital on October 29 in Neodesha.

The staff meeting of the St. Joseph's Hospital was held in Concordia on November 6. Dr. Wayne Bartlett of Wichita spoke on "The Treatment of Gall Bladder Diseases" and Dr. C. A. Hellwig of Wichita spoke on "Autopsies." Members from Smith, Jewell, Mitchell, Republic, Washington, Marshall, Clay, Ottawa, Shawnee and Cloud counties attended the meeting.

BOOK NOOK

BOOK REVIEWS

MODERN DERMATOLOGY AND SYPHILOLOGY—S. William Becker, M.D., and Macmillian E. Obermayer, M.D. Published by the J. B. Lippincott Company of Philadelphia, and priced at \$12.00. The book contains 871 pages, well indexed and with a splendid bibliography. The authors have presented a complete volume of modern diagnosis and treatment of dermatology and syphilology which will be of great assistance to the student and to the medical practitioner as well as to the postgraduate student and the specialist. The material is primarily the ideas of the authors, and secondarily those of other workers in the field. In as much as the authors are Assistant Professors of Dermatology and Syphilology at the Kuppenheimer Foundation, of the University of Chicago, they have been able to give an informative survey of their twelve years of clinical research, supplementing rather than replacing orthodox treatments of disease complexes. Modern methods are explained in detail, and old methods are criticized only

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wherein the modern methods have been tested and proven of superior value.

CANCER IN CHILDHOOD, A Discussion of Certain Benign Tumors—Harold W. Dargeon, M.D., F.A.A.P., Attending Pediatrician of the Memorial Hospital for Cancer and Allied Diseases of New York. Published by the C. V. Mosby Company of St. Louis and priced at \$3.00. This small monograph of 114 pages gives a complete survey of malignant diseases of childhood in a symposium form and discusses the various papers written on this subject, as well as the collective efforts and experiences of members of the departments of the Memorial Hospital for Cancer and Allied Diseases of New York. Although cancer is a comparatively rare disease in children, it is an important cause of death and according to the author, appears to be on the increase in the death rate, among individuals below sixteen years of age. This book would be a valuable adjunct to the library shelves of all pediatricians and others interested in this subject.

THE NEW INTERNATIONAL CLINICS—Volume III, New Series Four, published by the J. B. Lippincott Company of Philadelphia and edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

THE NEW INTERNATIONAL CLINICS, Volume II, New Series Four, 1941—Published by the J. B. Lippincott Company of Philadelphia, Pa. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa., with the collaboration of Francis Gilman Blake, M.D., Russell L. Cecil, M.D., Vernon C. David, M.D., Nicholson Joseph Eastman, M.D., Karl Musser Houser, M.D., William John Kerr, M.D., John W. McNee, D.S.O., M.D., Jonathan C. Meakins, M.D., George Richards Minot, M.D., John Walker Moore, M.D., John Herr Musser, M.D., Lewis Pollock, M.D., Isidor S. Ravdin, M.D., Borden Smith Veeder, M.D., George Barklay Wallace, M.D., Russell M. Wilder, M.D., and Alan C. Woods, M.D. Containing 299 pages.

INFANTILE PARALYSIS—Published by the National Foundation for Infantile Paralysis, Inc. The book is a series of six lectures each discussing the phases of the disease and it is the hope of the organization that thru the publication of these lectures on the subject, much assistance will be given to physicians and health officers, in their efforts in combatting poliomyelitis. The lectures discuss such subjects as the history, etiology, immunology and pathology of the disease and the treatment and rehabilitation of the patient.

X-RAY THERAPY OF CHRONIC ARTHRITIS (Including the X-Ray Diagnosis of the Disease)—Karl Goldhamer, M.D., Associate Roentgenologist, St. Mary's Hospital and Quincy X-Ray and Radium Laboratories, Formerly Roentgenologist, University of Vienna; Honorary member, Mississippi Valley Medical Society. Published by the Radiological Review Publishing Co., Quincy, Illinois, priced at \$2.00. Contains 131 pages illustrated.

BOOKS RECEIVED

ESSENTIALS OF GENERAL SURGERY—Wallace P. Ritchie, M.D., Clinical Assistant Professor of Department of Surgery, University of Minnesota Medical School. Published by the C. V. Mosby Company, St. Louis, Missouri. The book has 813 pages, and 237 illustrations and is priced at \$8.50.

ACCIDENTAL INJURIES, The Medico-Legal Aspects of Workmen's Compensation and Public Liability—Henry H. Kessler, M.D., Ph.D., F.A.C.S., Medical Director New Jersey Rehabilitation Clinic, Formerly Medical Advisor New Jersey Workmen's Compensation Bureau. Second Edition published by the Lea & Febiger Company, Philadelphia, Pa. 1941. Priced at \$10.00. Contains 202 engravings, and 803 pages.

A TEXT-BOOK OF PATHOLOGY—Fourth Edition, edited by E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis. Published by the Lea and Febiger Company, Philadelphia, the book has 431 engravings, two color plates and is priced at \$9.50.

FOREIGN BODIES LEFT IN THE ABDOMEN, The Surgical Problem and the Legal Problem—Harry Stureon Crossen, M.D., School of Medicine, Washington University and David Frederic Crossen, LL.B., School of Law, Washington University, St. Louis, Missouri. Published by the C. V. Mosby Company, St. Louis, 1940. Priced at \$10.00. Contains 212 illustrations, four color plates and 762 pages.

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ANNOUNCEMENT

The American Urological Association offers an annual award "not to exceed \$500.00" for an essay (or essays) on the result of some specific chemical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the committee on scientific research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

Essays shall be in the hands of the Secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Connecticut, on or before April 1, 1942.

The Second American Congress of Obstetrics and Gynecology will be held in St. Louis, Missouri, on April 6-10, 1942.

KANSAS MEDICAL ASSISTANTS

The Sedgwick County Medical Assistants Society met on October 15 in Wichita. Mrs. Rene Gouldner, Wichita Chairman of the British War Relief Committee for Sedgwick County, spoke on the local and national work of that organization.

The Cowley County Medical Assistants Society will entertain the members of the Sedgwick County Medical

Assistants Society on November 14 at the Arkansas City Country Club. Speakers will be Dr. J. V. VanCleve of Wichita, Dr. C. C. Hawke of Winfield, and Dr. W. G. Weston of Arkansas City. At the October 23 meeting of the organization, held in Arkansas City, Mr. Grant Acton spoke on "Collections".

The Topeka Physicians Assistants Society held a meeting at the Pennant Cafeteria on November 3. Miss Elizabeth Snyder a member of the staff of the division of the Blind of the Kansas State Board of Social Welfare spoke on "Conservation of Eyesight." The next meeting will be held on December 1 and will be a Christmas party. The society has planned to adopt a needy family for Christmas.

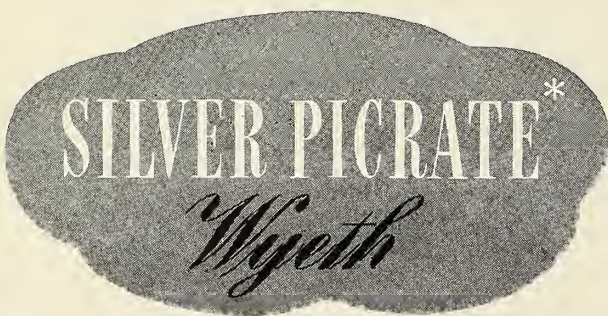
A petition for a charter has been received from the Atchison Medical Assistants Society, which was organized on June 3 with thirteen members. The following were elected at the meeting held September 23: President, Miss Rosalyn Lieberman; Vice-President, Miss Helen Tucker; Secretary-Treasurer, Miss Doris Van Welden.

NOTICE

Annual State dues of the Kansas Medical Assistants Society, of fifty cents, are now due and payable to your local secretary or to Mrs. Mildred McClure, Recording Secretary, 322 Brotherhood Building, Kansas City, Kansas.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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PRESIDENT'S MESSAGE

Our first and second vice-presidents, together with the councillors are expected to assist, in every way possible, our state chairman Mrs. T. D. Blasdel. Our national chairman on organization gives us this slogan: "Every doctor's wife in health defense." A larger membership is essential for several reasons—

1. Doctors' wives need authentic information on health problems.
3. Doctors' wives are needed in health defense.
3. Income for the auxiliary should be increased by increasing membership rather than by dues.

Because of the critical illness of Mrs. Blasdel's mother she needs the help not only of those directly on the organization committee but by every auxiliary in the state. We strongly urge that they increase not only their own membership but be active in organizing new groups. Whenever an auxiliary has an interesting meeting, be sure to send an account of it to Mrs. Ransley Miller. This will help to sell our organization to non-members.

Let us not forget the families of the doctors who are in military service, especially at Thanksgiving time. This is one big way in which we can foster greater friendships and mutual helpfulness with one another.

As this holiday season approaches let us count our many blessings and be thankful that we live in Kansas.

Sincerely,

Mrs. W. Y. Herrick.

NUTRITION

"Dr. Russell M. Wilder was the keynote speaker in the two-day meeting on Nutrition in Relation to National De-

fense called by Gov. Payne Ratner. He was introduced by Dr. Clyde D. Blake, of Hays, president of The Kansas Medical Society.

The sessions today, under the direction of Dr. Margaret M. Justin, dean of the Division of Home Economics, Kansas State College, will work out an active health campaign for the state.

If twenty-eight per cent of the young men aged twenty-one to thirty-five are rated in class F-4 as unfit for military service, it is evident that physical fitness of the nation is equally impaired," Dr. Wilder declared.

More than forty per cent of the nation receive inadequate incomes for proper diet, according to a 1936 survey, yet a minimum of thirty cents a day is necessary for adequate food per person, he said.

The statement that 45,000,000 Americans are undernourished has been challenged," he said, "but it would be closed to 90,000,000 if we measured each person against the 'gold standard' of proper nutrients."

In presenting statistics to show the need of a vigorous health thru nutrition program, Dr. Wilder pointed out that nutrition is a problem of all income groups, not alone from the standpoint of final disease but from sub-health, functional disorders, nervousness, fatigue and worry."—From the Topeka Daily Capital.

MEDICAL ADVISERS TO THE NAVY

Three physicians have been appointed as consultants to the medical department of the United States Navy, newspapers reported October 15. They are Drs. Frank H. Lahey, Boston, President of the American Medical Association; Donald C. Balfour, director of the Mayo Foundation, Rochester, Minnesota, and Wilbur A. Sawyer, New York, director of the International Health Division of the Rockefeller Foundation.—Journal of the American Medical Association.

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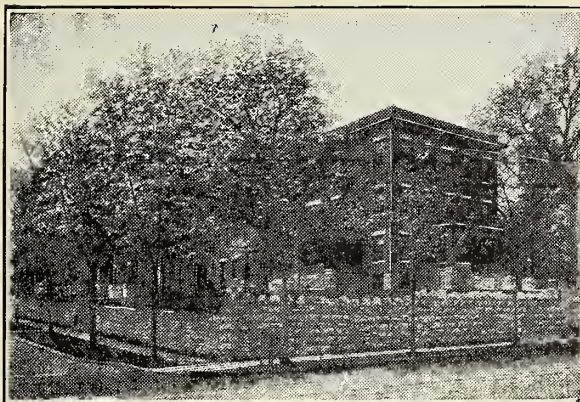
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THE PATHOGENESIS OF CHOLECYSTITIS*

Nathan A. Womack, M.D.**

St. Louis, Missouri

The history of the development of our knowledge of the clinical picture and the care of the patient with gallbladder disease is one of constant disagreement. Progress has been made chiefly by the trial and error method as applied to clinical experience. By the use of statistical methods various syndromes have come to be recognized and suitable forms of treatment have become standardized. This has been a slow and costly procedure as can be recalled by the long controversy concerning cholecystectomy or cholecystostomy in the treatment of chronic cholecystitis. We are witnessing it today in the dispute over immediate or delayed surgery in the treatment of acute cholecystitis.

If the nature of the origin of cholecystitis were better understood, and the mechanism of the production of symptoms apparent, the answer to many questions would be easier. The question of the diagnosis and therapy of any disease is always dependent upon a knowledge of its fundamental nature. It is, therefore, of utmost importance that an effort be made to obtain a better understanding of what produces the pathologic changes in the gallbladder, now so well recognized and how these changes are able to disturb the economy of the body.

The earliest information obtained in regard to cholecystitis was by deduction. While gall stones had been observed many times and had been described, the clinical picture of biliary colic and common duct obstruction is not found until the writings of Francis Glisson whose monumental work appeared at about the middle of the seventeenth century. As has so often been the case in medical history Glisson suffered from this disease that he described so well, and his assumption that the origin of the pain was in the extrahepatic biliary tract and not the liver

was so well presented that it has not been successfully challenged. Subsequent anatomical and clinical studies completed the picture of the disease so that by the middle of the nineteenth century it was well recognized and the problem ready for surgical attack. The experience of Petit with cholecystostomy and later Langenbuch with cholecystectomy laid the groundwork for our present treatment of the disease.

All of these earlier studies, however, were primarily directed at the condition of cholelithiasis and common duct obstruction. The function of the gallbladder and those changes that take place when this function is disturbed, received little attention until the demonstration of the concentrating powers of the gallbladder by Rous and McMaster, and the discovery of a method of visualization of the gallbladder with roentgen rays by Graham and Cole. These two studies were responsible for a different trend in the type of investigation that followed. Attention was focussed on the physiology of the extrahepatic biliary passages, renewed interest in the chemical nature of bile appeared and careful pathologic studies were made in an effort to correlate the morbid anatomical findings with the clinical picture and the end result of treatment.

In the observations that I should like to report I shall spend very little time on the subject of cholelithiasis. That this is a chemical phenomenon following all of the laws regarding precipitation has been demonstrated clearly by Andrews and his colleagues. I refer primarily here to cholesterol stones as they form the great bulk of biliary calculi. That there is a close balance in the human between the cholesterol in solution in the bile, and the quantity and nature of the bile salts which hold it in solution, has been adequately shown. That precipitation will occur when the relative proportion of cholesterol is increased or the relative amount of bile salts is decreased can be demonstrated both in the test tube and in the experimental animal. Fairly conclusive data that this also occurs in the human have been collected. The processes that bring about these chemical changes in bile are not so clear cut but may have to do with the nature of the substances brought to the liver and to the function of the liver itself. Further light will be thrown on this phen-

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omenon when simpler and more accurate chemical technics are developed making possible easy separation of the various bile salts and esters.

For the present I should like to concern ourselves with the nature of the lesion in the gallbladder wall itself. That it is a true inflammation there can be no doubt, for in it one sees all of the phases of both degeneration and repair. An explanation of the origin of this inflammation, however, is not so simple, for it possesses many features peculiar to this particular organ and dissimilar to inflammations elsewhere in the body. The same is true of the resulting clinical phenomena. Thus any explanation of the pathogenesis of the disease must to a certain extent satisfy many of these pathologic and clinical peculiarities.

It is one of the most frequent inflammatory processes encountered in the abdomen. In a study of the gallbladders removed at necropsy in 612 consecutive cases several years ago Mentzer¹ found gross evidence of disease in sixty-two per cent. As a result of the type of clinical material studied this incidence is probably somewhat high. In a series of 3,000 consecutive necropsies performed on patients of all ages at the St. Louis City Hospital, a general hospital, Von Kaenel² found an incidence of gross disease of 17.5 per cent. There will thus be variation in the relative incidence of the disease depending upon the available material, the country and many other factors.

Cholecystitis is extremely rare in children and to a lesser extent in young adults, the period in life in which bacterial infections of the other abdominal viscera are prominent. As age progresses the frequency of gallbladder disease increases until it reaches its maximum during the fourth, fifth and sixth decades of life. In this respect there is a more striking resemblance to some of the so-called degenerative diseases such as arteriosclerosis, rather than bacterial invasion. Certainly there seems to be but little association between suppurative lesions in the intestinal tract and peritoneum and the frequency of cholecystitis. The famous triad of Moynihan, namely, cholecystitis, appendicitis and peptic ulcer seems no longer to hold true.

There is a decided preponderance of females over males and this seems to increase with age. Other important factors seem to be obesity, pregnancy and bodily habitus. Moore³ demonstrated several years ago that individuals with the sthenic and hypersthenic habitus were more often found with diseased gallbladders.

All of the above factors suggest a metabolic influence of some sort. It is possible that the part that they play may be associated with definite chemical

changes in the nature of the bile secreted and the formation of stones. That there is a definite relationship between the presence of stones in the gallbladder and cholecystitis has long been recognized. While stoneless cholecystitis is not infrequently seen, seldom does one observe the presence of stones in the gallbladder over a long period of time without pathological changes in the gallbladder wall. While it is difficult to separate cause and effect in such instances, the changes noted often differ strikingly from the lesions produced by calculi in other organs. Furthermore stones often denote cystic duct obstruction either partial or complete an important factor that we shall refer to shortly.

In considering the pathologic picture seen in cholecystitis one is again impressed by many unique features. Gangrene is often encountered with the cystic artery patent and an abundant collateral circulation present between the liver and the gallbladder. So profuse is this circulation that in the experimental animal we have found that it is impossible to produce gangrene of the gallbladder by obstruction of the cystic artery alone. This, therefore, differs from the usual type of gangrene seen in other portions of the body in which arterial obstruction is the chief factor. It is highly suggestive of a direct tissue injury and tissue death.

Rare, indeed, does one find microscopic evidence of acute inflammation of the gallbladder without evidence of a preexisting chronic inflammation as shown by fibrosis and infiltration by those cellular elements usually associated with chronic inflammatory reactions. This is not consistent with the picture seen in pure bacterial infections in other parts of the body.

The predominant pathological picture seen in the human gallbladder during its early phase is one of increased vascular permeability and evidence of direct tissue damage. The vascular permeability is evidenced by edema and often extravasation of blood throughout the wall even under the serosa where it is often mistaken for gangrene. There is usually a profuse monocytic infiltration with a relative paucity of cells of the granular series in proportion to the acuteness of the inflammatory process. The evidence of tissue damage may be seen as definite necrotic areas throughout the wall and by fibrosis. Even in the early stage of the inflammation there is a marked stimulation to fibroblastic proliferation.

Seldom does one see acute cholecystitis without obstruction of the cystic duct. There are many clinical analyses in the literature verifying this fact. Judd⁴ found that stone was present in the cystic duct in 95.4 per cent of 484 cases and in a collection

from the literature of 3863 cases Berck⁵ reported a frequency of stone in the cystic duct in 92.5 per cent of the instances. In the remaining small group the obstruction was due either to an inflammatory process or to some congenital anomaly as has been stressed by Seelig⁶ and by Gage⁷.

One other feature that is often encountered in cholecystitis is evidence of an inflammatory process in which the inciting factor is a lipid. This is most commonly seen in the so-called strawberry gallbladder in which the reaction is apparently due to cholesterol or some of its esters. Other bile substances may occasionally be observed with an associated inflammatory reaction.

In searching for the causative agent of cholecystitis a substance or mechanism must be found producing a particular type of tissue injury as has been described, there must be easy access of this material to the gallbladder, the action must be increased with cystic duct obstruction and there must be present the potentiality for modification in relation to certain metabolic phases during the life of the individual.

Recently it occurred to Bricker⁸ and myself that bile might fulfill many of the above qualifications and we have submitted evidence in a preliminary report that such is true. I shall quote some of the evidence presented in that report.

For a long time the local cytotoxic effect of bile and many of its components on tissue has been recognized. With the exception of the more resistant and adapted mucosa of the intestinal tract and the excretory ducts of the biliary tract, there are few instances in which the production of cellular injury does not occur when bile comes in contact with such tissue. This local action is to a large extent dependent upon the concentration of bile or the several components of bile. For the most part it presents itself as edema, increased capillary permeability with extravasation of blood, round cell infiltration and direct tissue necrosis. This can be easily demonstrated when bile of various concentrations is injected into the subcutaneous tissue of an experimental animal.

That bile may be an important factor in the production of gallbladder disease has been suggested by others particularly Aronsohn, and Andrews⁹ and by Ravdin¹⁰ and his co-workers. These investigators injected bile or bile salts into the gallbladder through the cystic duct or common duct and observed transient acute inflammatory changes in the wall. That the factor of obstruction is an important one has been emphasized by Cole¹¹. He has collected an impressive series of both clinical and experimental observations which seem to show beyond doubt that chronic cholecystitis supervenes when a partial ob-

struction to the cystic duct is present over a long period of time.

In our experiments cystic duct obstruction with the injection of bile or several of its components was attempted. The animals were treated by ligation of the cystic duct, ligation of the cystic duct with replacement of the gallbladder bile by an equal amount of physiologic salt solution and replacement of bile by various concentrations of dog's bile, commercial dried bile, cholesterol emulsions, sodium glycocholate and sodium deoxycholate with and without cystic duct obstruction. All injections into the gallbladder were made through the cystic duct in order that there should be no trauma to the gallbladder wall. In order to eliminate this mechanical trauma further that portion of the gallbladder adjacent to the liver was examined in detail giving an area of tissue far removed from any site of trauma. The animals were sacrificed at various intervals ranging from twenty-four hours to several months. Both dogs and rabbits were used but because of the closer resemblance of the dog's gallbladder to that of the human both in its function and in the type of bile present, this animal was considered best suited for such a study. Our results may be summarized as follows:

1. With occlusion of the cystic duct after the gallbladder has been emptied and washed of bile and the lumen filled with physiologic salt solution, no pathologic change of importance was noted in the gallbladder wall.

2. Occlusion of the cystic duct without disturbing the contents of the gallbladder resulted in a moderate amount of edema, and round cell infiltration with subsequent slight fibrosis of the gallbladder wall.

3. Occlusion of the cystic duct with replacement of the gallbladder bile by a solution of commercial dried bile (Desicol)* resulted in the various degrees of inflammation that are encountered clinically in cholecystitis, depending however upon the concentration of the bile solution. Where this concentration was as great as twice that of normal gallbladder bile, complete necrosis of the gallbladder was often observed. If the cystic duct was not occluded, the observed changes were slight and for the most part transient.

4. When concentrated dog's bile was used a similar change was encountered which likewise seemed to be dependent upon the concentration of the bile. Where this concentration was as great as twice that normally seen, complete necrosis of the gallbladder wall was often encountered. At times where such necrosis was not present there was often

*Desicol was supplied us through the courtesy of its makers, Parke, Davis and Company.

seen either a precipitation of the bile in the form of small dark granules of bile solids or there was an extraordinary outpouring of mucus with mucous gland hyperplasia on the part of the gallbladder epithelium.

5. Similar types of reaction have been given by many components of bile. Among those studied have been sodium deoxycholate, sodium glycocholate and cholesterol emulsions in various concentrations as well as cholesterol dissolved in dog's gallbladder bile. These reactions have not all been identical in degree, sodium deoxycholate being the most destructive often resulting in gangrene.

6. Histological studies of human gallbladders removed at operation show inflammatory changes identical to those that we have produced experimentally in dogs as well as direct evidence that many of the components of bile may be encountered in the wall of the human gallbladder with a resultant inflammatory reaction.

It would seem then from these observations of our own and from those of others that it is safe to conclude that partial or complete occlusion of the cystic duct is capable of producing the pathologic picture of cholecystitis, the nature of the cholecystitis being dependent upon the composition of the bile imprisoned and the completeness of the cystic duct obstruction. This by no means assumes that the role of bacteria can be completely excluded in the production of the disease. Where tissue is injured bacterial invasion is commonplace. This should be especially frequent in an area intimately associated with the liver which drains the portal system, and undoubtedly is. It explains why so frequently the gallbladder wall is sterile even in acute cholecystitis and why when organisms are isolated from either a normal or diseased gallbladder they are generally the type usually found in the intestinal tract. It explains why some so-called empyemas of the gallbladder contain pus and others a cholesterol emulsion and no organisms at all. It complements the role played by bacteria in the explanation of all types of cholecystitis.

So far we have attempted to explain the origin of the pathologic findings in the gallbladder in various forms of cholecystitis. Let us now consider very briefly the mechanism of the production of the clinical syndrome we have come to recognize as that due to disease of the gallbladder.

The outstanding symptoms of cholecystitis are pain, nausea, vomiting and a peculiar type of dyspepsia. Visceral pain must always be associated with the stimulation of specific nerve fibers or endings. The other symptoms have to do with altered intestinal motility. In view of the fact that the intestinal

tract does not seem to be directly involved in the disease it is natural to assume that this motility is disturbed through some reflex mechanism. This would involve the action of motor nerves. Thus when these symptoms are considered purely from a physiologic point of view our attention is immediately focussed upon the visceral nerve supply and in particular the nerve supply of the gallbladder and the possibility of its being involved in the inflammatory process. Recently¹² I undertook a study of a series of gallbladders removed surgically with this idea in view.

Blocks were cut at random from the fundus and neck of gallbladders removed from patients suffering from obvious chronic cholecystitis. Sections were made and studied for evidence of involvement of the nerve supply in either exudative or reparative inflammatory processes. The changes observed were roughly of two types. The most frequent was a profuse round cell infiltration around the nerve trunks. The cellular reaction was chiefly lymphocytic and monocytic in type and was often found completely surrounding the nerve trunks. Strangely enough this type of lymphocytic reaction was often seen only around the nerve. In all probability this was due to the close proximity of the nerve trunks to the lymph channels. Such an area around a peripheral nerve, regardless of the inflammatory agent is generally associated with increased irritability on the part of the nerve and the clinical picture of neuritis appears. It must be borne in mind that not only can nerve endings be stimulated but nerve trunks as well.

The other change frequently found involving the nerves was that of fibrosis. Often there was invasion of the nerve trunks producing fragmentation of the nerve fibers so that identification was frequently difficult. Again where such fibrosis is found involving peripheral nerves increased irritability is noteworthy. Amputation neuromata offer an exaggerated but similar reaction in other parts of the body.

The gallbladder is supplied by both sympathetic and para-sympathetic fibers. Pain fibers follow the sympathetic pathways having synapses in the celiac ganglion and extend along the greater splanchnic trunks entering the cord in the midthoracic region. Apparently the majority of these fibers are located in the right trunk which may explain the reference of pain in biliary colic so frequently to the right scapular region. Both motor and sensory fibers extend along the vagal pathways, some of which pass directly through the celiac ganglion. Beneath the muscularis in the wall of the gallbladder one often encounters single ganglion cells and at other times relatively large ganglia. These probably represent vagal pathways. The pain fibers to the biliary tract

extend along the hepatic and cystic arteries as has been shown by Moore¹³. These fibers extend through the musculature and apparently terminate in the mucosa or possibly between the epithelial cells of the mucosa. The fibers have no specialized endings but terminate as raw, exposed nerve fibers.

Visceral sensory nerves may be stimulated by stretching, inflammation or ischemia. Often there is a combination of two or three of these factors at the same time. The production of pain by the stretching of visceral nerves is a frequent observation clinically when the mesentery is pulled upon during an operation under local anesthesia and during spasm of smooth muscles. The explanation of pain in inflammation is one that still requires further study. It is quite possible that edema may play some part in itself by stretching the nerve, or that certain substances liberated or formed by the inflammatory process may stimulate pain fibers. The throbbing pain frequently felt in acute inflammations of the extremities is probably tension with the resulting stretching of nerves by the forcing of blood into the area with each pulse beat. An interesting observation is one recently reported upon by Moore¹³, in which he noted that the potassium ion, even in isotonic solution, was markedly irritating to both pain endings and pain fibers. In stressing this fact he called attention to recent observations in which a deposition of potassium ions has been noted in the intercellular fluid of inflammatory exudates. The factor of ischemia is an old one. The observation of pain during the sudden occlusion of an artery, due either to spasm or embolus is well recognized. That the accumulation of acid bodies in the tissues following ischemia might be instrumental in the production of pain has been previously noted. That this actually takes place in the case of lactic acid has been more recently demonstrated.

The pathologic changes that have been seen about the nerves in the wall of badly damaged gallbladders are such that would tend to increase the tension on nerves and decrease the blood supply. The factors then of stretching and ischemia must be considered seriously where there is marked fibrosis around nerve trunks. If these factors are not in themselves sufficient to produce pain, they undoubtedly will alter the threshold of stimulation to such an extent that stimuli that otherwise would not be apparent become noticeable. The same reasoning applies to the presence of inflammatory changes around nerve fibers. Inflamed areas are notably tender. At times slight pressure exerted on a localized region of inflammation will produce excruciating pain that normally would hardly reach the level of consciousness.

The effect of a given stimulus upon the nerves of the gallbladder will depend not only on the irritability of these nerves but also upon the number of nerves present and upon the strength and repetitiveness of the stimulation. It is a well known clinical observation that the normal sensibility of the upper right quadrant is greater than that of most other parts of the abdomen, probably due to a considerable extent to the presence of a larger number of pain fibers. The stimulus probably most commonly encountered in biliary tract disease is that of increased intracystic or intraductal pressure either due to abnormal closure of the sphincter of Oddi or to spasm of the sphincter or duodenum or some portion of the biliary tract. This results in increased intracystic or intraductal pressure with the appearance of pain, nausea and vomiting. That this occurs is not inference. It has been demonstrated both in the experimental animal and in the human by several investigators.

It must be remembered that the same factors described above as having to do with the irritability of pain fibers, likewise apply to the irritability of motor fibers. This being true, where such lesions as we have described are present, one would expect to encounter more frequently crises due to a sudden increase in intra-biliary tract pressure as a result of muscle spasm and certainly this seems to be the case.

A clinical application of the above conception as to the origin of symptoms in cholecystitis may be seen in a study of the end results after surgical removal of those gallbladders in which there is very little fibrosis or inflammation seen in the wall. In this group will be found those instances of cholesterosis with and without stones as well as cholecystitis in which there is a minimal lesion. Recently Mackey¹⁴ reviewed a series of patients from the Barnes Hospital with non-calculous cholecystitis and cholesterolosis, analysing the end results in relation to the local pathologic lesion, the history of the patient and cholecystographic visualization. From his results it seems obvious that those patients experience a greater relief from symptoms after cholecystectomy who have definite fibrotic and inflammatory changes in the wall of the gallbladder and in whose cases the history of biliary colic is outstanding. Such patients seem to have been relieved in almost direct proportion to the amount of damage seen in the wall of the gallbladder. The exceptions to this were those instances in which stones were present with cholesterolosis.

It is interesting to consider what takes place when the gallbladder is removed that would cause a disappearance of symptoms if those symptoms were explained on the mechanism that we are suggesting.

Perhaps one of the most important factors would be the removal of a large number of nerve fibers and nerve endings so that a given stimulus would not have the same marked effect. Furthermore a considerable amount of inflamed and scarred tissue is removed allowing the rest of the biliary tract a chance to recover. A third factor is the removal of a number of the causes of spasm such as stones and nerves with a lowered threshold of stimulation that have to do with the motor function of the biliary tract. In those patients with severe gallbladder disease that are not completely relieved of their symptoms it is conceivable that there is a sufficient amount of nerve tissue that is damaged around the common and hepatic ducts which is left behind and which will still act to produce symptoms. If only a small proportion of the damaged nervous mechanism is left, then it is quite possible that a few of the minor symptoms would persist such as may be due to slight alterations in motility of the gastro-intestinal tract, as dyspepsia and nausea.

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Warns of Dangers in Administering Sulfanilamide During Pregnancy—The administration of sulfanilamide during pregnancy is not without danger to the baby because of the rapidly attained similarity of levels of the drug in the blood of the mother and the fetus, George P. Heckel, M.D., Rochester, N. Y., reports in *The Journal of the American Medical Association* for October 18.

This warning is based on the findings in thirteen mothers who received sulfanilamide or its derivatives during pregnancy. A severe anemia in the infant of one of them at birth suggests fetal injury from sulfanilamide, the author states. However, unless an infant is unusually sensitive to sulfanilamide there is little likelihood of any injury from the amounts of the drug obtained in the milk from the mother.

REPORTING OF TUBERCULOSIS IN KANSAS

F. C. Beelman, M.D.*

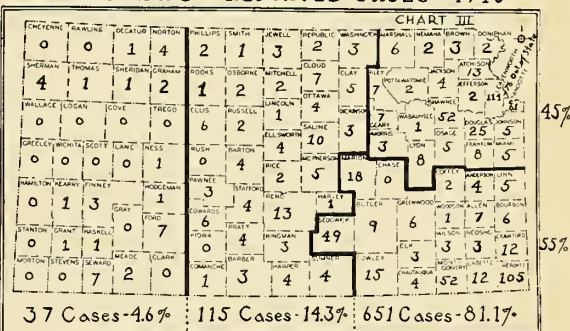
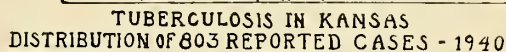
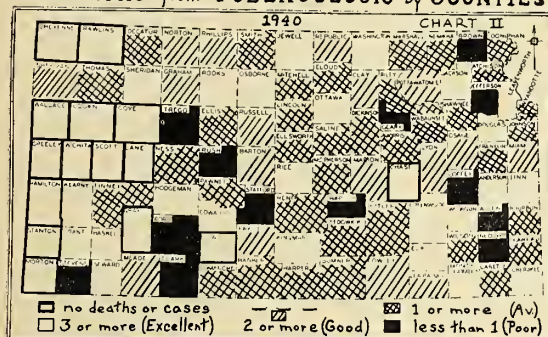
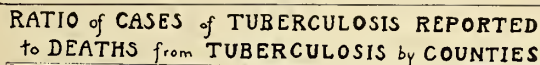
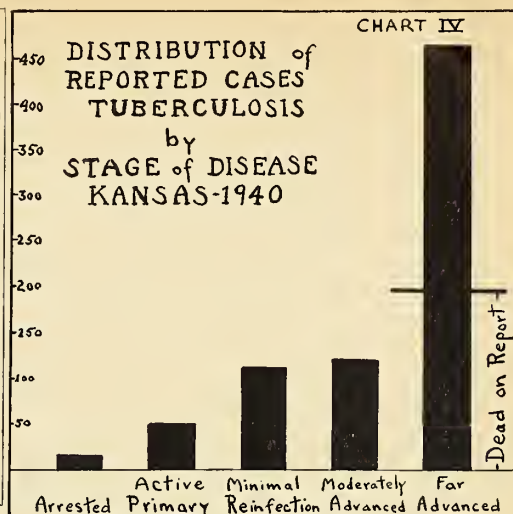
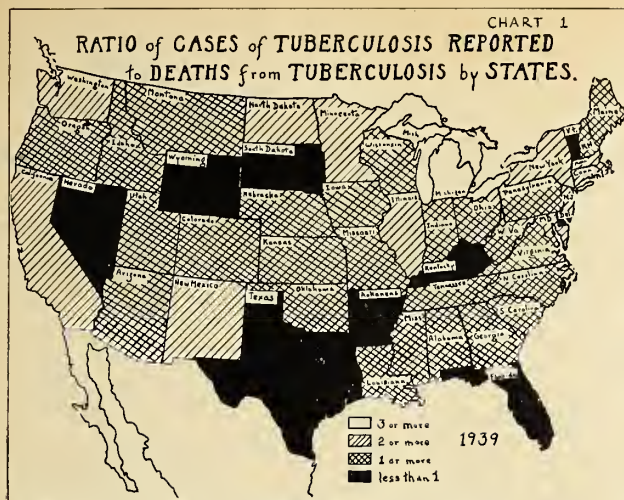
Topeka, Kansas

During 1940 a total of 803 cases of tuberculosis was reported in Kansas. An increase of 46.5 per cent over the previous year of 541 reported cases. The total number of deaths from tuberculosis increased from 429 in 1939 to 447 during the past year. This gives the state a reporting ratio of 1.8 cases of tuberculosis per each tuberculosis death. Available statistics (1939 Chart I) shows that there was only one state (Michigan) with a reporting ratio of over three; eleven states had a ratio of over two, while twenty-five had a ratio of over one and nine states reported less than one case of tuberculosis per death. Kansas is an average state in the reporting of tuberculosis and with little added effort will be able to progress into the select group of states reporting more than two cases of tuberculosis per death. Reporting ratio by counties is shown in Chart II. In fifteen counties there were no deaths and no cases reported due to tuberculosis; twenty-three counties had an excellent ratio of three or more cases per death, seventeen had a good reporting ratio of over two; thirty-six counties were average with one or over while thirteen counties were below average. As in previous years, the distribution Chart III shows that a high percent of the cases occur in the eastern third of the state. Cherokee County remains high, reporting 105 cases and twenty-eight deaths with a death rate of ninety-three per 100,000 population, which is more than twice the national death rate and almost four times the tuberculosis death rate of the state.

MORBIDITY

In the break-down of statistics on the 803 cases of tuberculosis, one outstanding fact is of interest. This is the distribution by stage of disease, as shown by Chart IV. It can readily be seen that more than fifty percent of all cases reported were either dead or in the far advanced stage of the disease when reported. Far advanced tuberculosis is extremely infectious to others and little hope of complete recovery can be given the patient. Perhaps the most difficult but certainly the most important time to discover tuberculosis is in the minimal or early stages of the disease. Of the cases reported only 112 or fourteen percent were classified as minimal reinfection tuberculosis. Tuberculosis in this phase of activity when found offers the physician, the patient and the public

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the best opportunity for control. From the physicians point of view he has uncovered a case of tuberculosis that usually responds readily to rest and good medical management. The patient's chances for complete recovery are directly proportional to early discovery. For close intimate contacts, friends, and the public, one more source of tuberculosis has been checked before it progressed to the infectious stage. Logical conclusions reached from a study of this chart would seem to indicate that:

1. A large percentage of advanced cases of tuberculosis are not under medical supervision and are seen only by physicians at the time of death. It is difficult to believe that such cases would continue under medical management and only be recognized at time of death or at autopsy, as 196 or twenty-four percent of all cases reported were dead upon report.

2. When the tuberculosis patient is aware of symptoms and seeks medical aid, at which time the case is reported, the large majority are in the advanced phase of the disease. This means that close intimate contacts have been infected and the patient's chances for complete recovery are poor.

3. If we are to control tuberculosis, the present policy of waiting until the patient presents himself with all of the classical symptoms, must give way to active case finding through repeated x-raying of apparently healthy intimate contacts of known cases. For finding unknown sources of infection, mass tuberculin testing with annual x-rays on older positive reactors has its place both as an educational process and in case finding.

Sanatorium or institutional care was provided for 248 or 30.8 percent of the cases. Married individuals were infected two to one over single individuals. As to sex 464 were male while only 339 were female. Only ten cases other than the pulmonary type of tuberculosis were reported. All cases of primary tuberculosis, unless in the active phase, were not considered as a new case of tuberculosis.

MORTALITY

The 1940 death rate from tuberculosis in Kansas has increased from the all time low of 22.4 in 1939 to a rate of 24.8 per 100,000 population. This low rate still places Kansas among the lowest ten states. The two point increase in the death rate during 1940 was due to an increase of twenty-eight deaths over the

previous year and a somewhat smaller correct population figure, as made available by the 1940 census. Thirty-six of the deaths were out-of-state residents which would give Kansas a 22.8 residential death rate. In the distribution of the deaths by race 82.7 percent were white, 12.0 percent negro, 4.4 percent Mexican and 0.6 percent Indian. In occupational groups laborers, housewives, farmers and students led the list in that order. The age group distribution follows closely the national curve with the peak rising in the young adult group and again in the older age groups.

It would appear from the few reported deaths occurring in the age group under two years, constituting less than one percent of the total deaths, that the complications of primary tuberculosis, such as tuberculous meningitis, tuberculous pneumonia or acute disseminated tuberculosis are not completely recognized. Of the six cases composing this group three were diagnosed as tuberculous meningitis, two as acute disseminated or miliary and one as a tuberculous pneumonia.

Distribution of deaths as to sex revealed that 256 were male while 191 were female. Marriage apparently increases the hazard of dying from tuberculosis, as 318 had been married while 129 were single.

SUMMARY

1. Kansas is an average state in the reporting of tuberculosis and with little added effort would be able to reach an excellent reporting ratio.

2. The incidence of tuberculosis in Kansas is low, the mortality rate placing the state among the lowest ten states.

3. Apparently a large percent of progressive cases of tuberculosis are only seen by physicians at an advanced stage of the disease or at time of death.

4. Far advanced cases of tuberculosis, which includes the group reported for the first time at death, are being reported four to one over the minimal or early case of tuberculosis.

5. The housewife still leads all the other occupational groups in cases and deaths from tuberculosis.

During the national emergency we will either make great gains or suffer great losses in our fight against tuberculosis. The gains will come from the chest x-ray examination that will be given the young men entering military service . . . the real losses will come if industry does not adopt the practice of x-raying employees. The massing of labor in concentrated areas creating crowded living conditions, increased mental, emotional and physical strain—inevitable by-products of industrial defense activities—are factors which increase and spread tuberculosis.—Kendall Emerson, M.D.

PROBLEMS IN THE THERAPY OF INTRACTABLE ASTHMA

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The treatment of asthma has, since time immemorial, presented a problem of almost insoluble proportion. However, as the etiology of asthma became better understood, quite naturally the concept of therapy found itself on firmer ground. Even though this be true in general and the avoidance of the asthmatic attack to a great extent has been accomplished, the results of one's therapeutic efforts directed toward the relief of a particular episode of asthma, on occasion, are most disheartening.

A recent communication has been presented by Waldbot¹ which has given a quite interesting review of the problem. It is the author's intention in this paper, to again review the subject briefly and report our own experiences in the treatment of cases of intractable asthma which were very interesting.

Before progressing to the treatment it might be advisable to consider for a moment, the mechanics of an asthmatic attack. The theory of Willis as quoted by Coca, Walzer and Thomen "that asthma is of a convulsive nature and caused by spasm of the respiratory passages, antedated, by more than a century, any definite evidence that human bronchi possess the power of contracting or entering into a state of spasm". From 1779 to the present there have been defenders of this idea.

The next theory of the production of the asthmatic attack is the "theory of bronchial obstruction other than by muscular spasm". Among the earliest exponents of this was Beau who defended his thesis in 1848. In 1901 von Strumpell upheld the theory. Because of the absence of hypertrophy found in bronchiolar musculature he held that muscular spasm was not the cause of asthma. He suggested that asthma was the result of turgescence of the mucosa. Muscle hypertrophy has however been definitely described. Diaphragmatic spasm was thought to be the causative factor and has had many exponents. As a matter of actual fact the mechanism which results in the asthmatic paroxysm is not known.

Nevertheless the changes that occur in the bronchi are quite interesting and important. The comparison between the normal and asthmatic changes in a six mm. bronchus is schematically shown and gives rise to the supposition that the mechanism producing asthma may be a combination of factors namely a constriction of the bronchioles both from

a turgescence of the membranes and muscular contraction or spasm acting in unison. The heart changes are interesting and important but will not be discussed.

It should be noted here that we are dealing with the state of bronchial asthma in contradistinction to the so-called cardiac asthma which is a paroxysmal cardiac dyspnea rather than a true asthmatic state. The diagnosis between the two should seldom present any outstanding difficulty. The differentiation should, however, be made since the therapeutic efforts are not the same, as a matter of fact being quite dissimilar. By this is meant that morphine can be used to advantage in the cardiac type, but is contraindicated in the atopic or bronchial asthma.

TREATMENT

The drug preparations which have been recommended for the treatment of asthma have been as limitless as the horizon. The enumeration of those remedial agents used over the years is so long and so varied that its recitations becomes almost humorous. There are, however, numerous agents which have remained throughout the years as valuable adjuncts in the treatment of asthma.

Iodine, in one or another of its preparations, seems to retain its high place. Ephedrine in recent years has been rejuvenated and put into the armamentarium of the physician, and has proven it's worth beyond all doubt. Other drugs have been recently developed which are gaining and retaining a place of usefulness. In epinephrine, however, we have a therapeutic weapon which has saved lives and added immeasurably to human comfort.

In regard to the use of epinephrine it might be here stated that in case of anaphylactic shock, it has not been fearlessly enough employed. It has recently been pointed out that in the event of these accidents which do occur, the exhibition of this drug must be heroic in proportion to the state which is met. It is rarely the over-use but rather the under-use of adrenalin by all routes that gives rise to the fatal outcome experienced occasionally, but fortunately infrequently.

Two other drugs which have been used to a great extent for the relief of bronchial asthma and which present grave dangers are morphine and atropine.

The condemnation of these two drugs which, have been thought to be so useful, seems paradoxical. When the pharmacology of morphine and the whole opium group is recalled the objections seem more valid. The depressant effect of morphine or the opium series upon the respiratory system via the central nervous system, and the known effect upon the bronchiolar musculature which it causes to contract rather than relax is case enough against

morphine. Indeed the recent literature is replete with warnings against the use of drugs of this series and especially the various salts of morphine.

Meyer and Gottlieb have demonstrated that in ordinary therapeutic doses the effect of atropine on the bronchial mucous membrane and it's supposed influence on bronchial constriction is practically negligible. It has also been pointed out that the excessive drying of the mucous membranes might well be deleterious by making the cough more intractable, which is to be avoided. The extreme toxicity of the drug in effective doses makes it's condemnation more easily appreciated.

One of the newer and more spectacular departures in the treatment of asthma is the use of helium gas. It's value in this field depends upon the same quality which caused it to become an international embarrassment sometime ago, i.e. it's lightness and safety of handling. This work was presented in 1936 by Alvin L. Barach². The virtue of helium "depends wholly on it's decreased specific gravity in relation to nitrogen". In the normal or unobstructed respiratory tree there is little difference noted in the intratracheal or intopleural pressures whether the helium-oxygen or air-oxygen mixtures were used, the former being one-third the weight of the latter. This, however, does not obtain when there is obstruction to the respiro-tubular system. In this event or in the event of dyspnea when there is a forced change of air and the small tubular elements act actually as constrictions, a different physical formula applies. This formula is as follows: "the velocity of movement of a gas through small orifices is proportional to the square root of the density of the gas". In human subjects who breathe through narrow orifices an actual reduction of as high as fifty per cent was found in the pressure of a helium-oxygen atmosphere as compared to air. The value of this gas is not only in the relief of asthmatics but also, as Barach states, "is mainly to be found in children in whom inflammatory swelling of the larynx and trachea, due to infection, foreign body or instrumentation, is frequent, although similar conditions occur in adults".

Passing along the whole list of drugs and modalities among which we will mention again morphine, atropine, belladonna, caffeine, as well as bronchoscopy, oil instillation and postural drainage, we come to the rational treatment of asthma. The rational therapy should include first, of course, the entire allergic problem, food, pollens, feathers, molds, animal emanations, et cetera. It seems more than superfluous to mention the need for a complete study to ascertain the true underlying etiologic factor which is the cause of the particular asthmatic

attack as well as all previous and obviously all subsequent attacks. This involves the usual detailed history of the disease and the running down of every single clue. Skin tests should be made. A careful search should be conducted for dusts and other causative factors peculiar to the environment in which the patient lives. This all must be done with great care for at best, regrets are more than sufficiently frequent. Other auxiliary means of attack are interesting, particularly the iodized oil instillation, but these will be passed and we will address ourselves to the two drugs which are readily available for emergency use in true bronchial asthma.

This brings us to the two particular modes of treatment which have been found of considerable benefit and comfort to both the patient and consultant. In 1931 Maytum³ presented what appeared to be a very rational means of approach but seemingly paradoxical therapeutic measure for the relief of severe asthmatic attacks. His work, of course, had had the foundation laid a long time before. The procedure to which reference is made, is the rectal instillation of ether and oil.

For years both ether and chloroform have been given for asthma. These drugs have been of great benefit but ether has been insufficiently used in asthma in comparison with the benefit it accomplishes. This, of course, applies to status asthmaticus or more specifically to those asthmatic paroxysms which have become refractory to every known therapeutic measure.

Maytum's colonic ether is given in quantities of one ounce to twenty pounds of body weight for light anesthesia. He suggests that morphine should be used before the administration of the ether preparation. The mixture used in equal parts of ether and olive oil. Two or three ounces may be given every fifteen or twenty minutes to maintain anesthesia. With this procedure the patient passes into a fairly profound state of anesthesia for a varying period of time and usually awakens in a relaxed state.

In his paper, Maytum³ reports three cases, the first having been given two injections of seven ounces each of the mixture, with a great amount of relief and controlled easily with codeine given twice daily. This case is interesting from another standpoint as he reports later relief subsequent to the eradication of a chronic ethmoiditis.

In the second case a total of forty-five ounces of the ether-oil mixture was given, but much more was lost than retained due to perineal relaxation which made retention very difficult. This case was obviously one in which there was a very definite psychogenic background.

The use of avertin has been recommended for persistent asthmatic states with high claims made for its efficacy. We have never had any experience with this drug.

The next drug to be mentioned is theophylline with ethylenediamine. This drug has, from time to time, found favor in the cardiopathies the causes of which were predicated upon vascular changes. I believe that the consensus of opinion at present as expressed by Gold⁴ is not generally in favor of administering this drug for the relief of coronary pain. Greene, Paul White and Feller⁵ investigated "the action of theophylline with ethylenediamine in intrathecal and venous pressures and on bronchial obstruction in cardiac failure and in bronchial asthma", which was the title of their contribution. The work of Greene et al antedates the denial of the virtue of the drug in certain heart diseases as expressed by Gold.

Greene and his coworkers showed rather incontrovertibly that there was a reduction in the intrathecal pressures in some arteriosclerotic states. They showed also reduction of the venous pressure in patients with severe cardiac congestion. At the same time a study was conducted on vital capacity as well as the subjective relief obtained in patients with asthma associated with chronic pulmonary disease, when aminophylline was injected intravenously during an attack. There was a definite increase in vital capacity and the subjective relief was pronounced. The medication was used in asthmatics who were refractory to epinephrine.

In addition to this investigation, aminophyllin has been used successfully by Efron,^{6,7} Herrmann and Aynesworth,⁸ Brown,⁹ and others,^{10,11} in asthmatic cases under our observation in which both rectal ether and theophylline with ethylenediamine were used to advantage.

CASE REPORTS

The first case to be presented is that of a boy aged six, referred by Dr. W. B. Steward. The boy had severe asthmatic attacks about every six weeks. The attacks were irregular in their intensity and some were so severe that 0.25 cc. of adrenalin with 1/6 grain of dilaudid had to be given before relief was obtained. It was thought on several occasions the child would expire. This clearly illustrates the severity of the seizures.

His attacks were not seasonal and occurred when he caught cold or played out in the wind. His mother has asthma and eczema, and he was found sensitive to a number of substances, particularly cottonseed and yeast. He was very sensitive to bacterial extracts.

On about January 15 he began to suffer dyspnea after being out and, perhaps, disregarding his diet. On January 17 he had a very severe attack and in the absence of his family physician he was seen by Dr. L. E. Eckles who was rather impressed with the severity of the asthma. He was given epinephrine and a sedative but the asthma

became progressively worse and he was admitted to St. Francis Hospital on January 17, 1939. At this time he was given two ounces of fifty per cent ether in oil, in accordance with Maytum's suggestion. During the next two hours he got some sleep and there was some lessening of the asthma. No very marked improvement was noted. This is emphasized because I believe we were not sufficiently valiant in our treatment with the ether-oil mixture.

Five hours after admission the lad was seen again and at this time he was indeed ill. He was cyanotic. His respirations were so labored that one had the impression that the whole bed moved as he breathed. The rate was sixty per minute. The pulse was poor in quality, irregular and rapid.

At 8:30 p. m. he was given 0.12 grams of theophylline with ethylenediamine. This dose was arrived at arbitrarily taking one-fourth of the maximum adult dose. The pulse improved while the drug was being given and almost instantaneously he began to be more comfortable. Respiration was much less labored. A cough was established and a large quantity of frothy mucus was expectorated. He was infinitely improved although there were still some asthmatic rales remaining. In about ninety minutes he was given about 0.07 cc. of epinephrine. His relief was complete and he wanted to go home.

On February 5, 1939 he was readmitted in another severe asthmatic attack which seemed to have been precipitated by being out in the cold. The theophylline with ethylenediamine was given with good results although not quite as spectacular as on the previous occasion. With this attack was a suggestion of an acute upper respiratory tract infection. His sojourn in the hospital on this occasion was only a few hours.

The second case is the mother of the patient just considered, age twenty-seven, admitted to St. Francis Hospital January 27, 1939. Four days previously she began to suffer with dyspnea. Large doses of epedrine ("ten capsules") had no effect. She started to work in a bakery and became promptly worse. She came to the office and was given 0.25 cc. of epinephrine with a considerable amount of relief. She was seen later in the day when adrenalin gave less relief. She was then sent to the hospital.

At 2:30 p. m. she was given 0.24 grams of theophylline with ethylenediamine and in fifteen minutes she was completely relieved although there were a few rales audible in her chest. The drug was given in ten cc. of fifty percent glucose and three minutes after the injection the patient complained that she was freezing. Her whole body was cold and in fifteen seconds she was, to use her own words "burning up". These side reactions were very evanescent.

The relief she experienced lasted approximately six hours, but the drug was not repeated until about 10:30 a. m. on the following day. At this time she again obtained relief for about six hours when she commenced to experience further trouble. At the end of the first twenty-four hours she was given morphine sulphate grains 1/6 and epinephrine 0.50 cc.

During the second twenty-four hours aminophyllin was given in normal saline solution. Relief was obtained but the different side actions were interesting. When only a few cubic centimeters had been injected she complained of a disagreeable salty taste. A severe or very disagreeable burning of the face, hands and tongue was noted. About the same time she said that everything looked green. All these reactions were momentary, the relief being marked and patient was quite comfortable. The theophylline with

ethylenediamine was repeated twice more when needed. The full recommended dose of 0.48 grams was never given because of the size of the patient.

This case was very definitely relieved of her dyspnea, but it must be said that between periods of relief there was intervals of discomfort and she was quite sick. On two occasions she was given morphine which I believe did more harm than good. For brevity's sake we need not discuss her whole allergic picture or daily record but suffice to say that after being admitted January 27, 1939 she was discharged February 1, 1939 in quite a comfortable state and asthma free.

Though these cases only constitute a very meager amount of experience their presentation seems justifiable because of the relief obtained particularly from the aminophyllin*. The value of ether, however, should not be forgotten.

SUMMARY

1. This paper contains a review of the various concepts of asthma in relation to its cause, pathology and therapy.
2. Reports of cases in which relief was obtained from rectal ether and from theophylline with ethylenediamine, are presented.

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*Note: In personal reports the theophylline with ethylenediamine medication was aminophyllin (G. D. Searle & Co., Chicago).

Human Experience Through History Has Shown Meat A Valuable Food—"Although vegetarianism has been extolled and meat criticised in the past, human experience through history has shown meat to be a valuable food," Doris W. McCray, Cedar Rapids, Iowa, says in a recent issue of Hygeia, The Health Magazine. "The composition of meat is more nearly like the proteins found in the human body than are the proteins of nuts and beans. Meat is a more complete protein to furnish the material from which to build the human tissues. Meat is nutritionally economical, it is practical and it certainly appeals to the taste. For the normal person, it is highly recommended. A vegetarian diet is greatly improved by the addition of eggs and dairy products, but it cannot equal the normal diet that includes meat."

The boy who wears a clean shirt but has a dirty neck is in the position of hospitals which deny admission to known cases of tuberculosis. Hospitals which admit known cases of tuberculosis or realize that tuberculosis may be present and unrecognized, are being modern, logical and wise. They may then segregate the known cases and protect their personnel. They will be alert to case finding among the new admissions. W. H. Oatway, Jr., M.D., Hospitals, August, 1941.

THE PSYCHIATRIST IN RELATION TO THE LOCAL SELECTIVE SERVICE BOARD

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Topeka, Kansas

The Selective Service Medical Examining Board consists of a sufficient number of practitioners of medicine to examine the ordinary influx of registrants from a particular area. In each state, there are geographical divisions into districts, there being seventeen districts in Kansas. Each district has in addition to the one or more regular draft examining boards, a supporting group of physicians in various medical specialties known as the "Medical Advisory Board." Each district has a minimum of at least eight specialists, including a surgeon, an orthopedist, an ear, eye, nose and throat man, an internist, pathologist, radiologist, dentist and a psychiatrist. These individuals, the Advisory Board members, are responsible for seeing only those cases which the regular examining board refers to them for a special checkup in their particular field, or in the event that the registrant himself appeals the decision of the medical examining board, which is within his rights, and so requests a supplemental examination by the specialist.

In theory the Medical Advisory Board constitutes a tremendous bulwark of strength to the regular examining board. Only exceptionally, however, have the Advisory Board specialists been called in to the field of operation to actually carry out examinations. Thus while the theory of the setup is excellent there are many practical difficulties, and in this presentation we are concerned particularly with the psychiatrist's relationship to the Selective Service Examining Board.

In practice the "psychiatrist" so listed on the roster of the medical advisory board may or may not be a psychiatrist, depending on whether or not an individual in this specialty is available. In seven of the seventeen boards of the Kansas Districts these men are not in the practice of psychiatry. In several of the other districts the psychiatrist listed as a member of the medical advisory board lives from fifty to two hundred miles distant from the local draft board, and consequently he is much less available for use. The psychiatrist differs somewhat from most of the rest of the advisory board members in his responsibility.

The only neuropsychiatric examinational procedures are included vaguely and inadequately in the regular physical examination. Thus form 200, the

regular report of physical examination, other than asking certain pertinent questions in the statement of the individual examined, includes only a very small space under the heading "nervous system" and asks specifically about only the pupillary and patellar reflexes. Also the general physical examination covers musculo-skeletal defects and endocrine disturbances. As a consequence, except for very conspicuous personality disorders and very gross neurological syndromes, the routine of the regular physical examination does not adequately cover this field. Despite this fact, however, on inquiry to a considerable number of medical advisory board psychiatrists, I have found only two individuals who have seen more than ten registrants, and many who have seen less than five, although their examining board in every instance has examined between one hundred and five hundred registrants.

The result then, of the organization setup of the draft and advisory boards, the lack of specific inquiry in the course of the physical examination, and the absence of anyone specifically interested in the neuropsychiatric picture on the examining board results in the lamentable situation that most of our draftees are given only a cursory (if any) neuropsychiatric evaluation. Unless some individual examiner in the draft board or the consulting psychiatrist goes much further than the present requirements, this situation is likely to continue to exist. The aim must be to improve the efficiency and increase the frequency of the neuropsychiatric examination. In part this can be accomplished through educational efforts.

THE EDUCATIONAL OPPORTUNITIES

The educational opportunities for the advisory board psychiatrist are limited only by, first, the amount of effort which he himself as a private individual wishes to volunteer, and second, the willingness on the part of the regular draft board examiners either to accept the responsibility themselves for the neuropsychiatric examination or to co-operate with the advisory board psychiatrist. It seems desirable and advisable that the advisory board psychiatrist, if provided with the information, present the neuropsychiatric point of view to the members of the examining board, outlining the following evidence as to why a neuropsychiatric examination is of extreme importance.

1. The cost of neuropsychiatric casualties: As a result of the neuropsychiatric casualties of the World War of 1917-18 three-fifths of the beds in our seventy-nine Veteran's Hospitals are, at the present time, occupied by neuropsychiatric patients. There are 33,000 neuropsychiatric cases as of June, 1940, in these Veterans' Hospitals. On the basis of recent observations it is estimated that there will be an ad-

ditional 4,800 men each year to add to this figure. The astounding cost during the seventeen-year period of 1923-40 was \$641,850,000 for compensation and an additional \$282,000,000 as the cost of hospital treatment for the neuropsychiatric patients alone, making an average of approximately \$35,000 per man. Putting it very bluntly, the elimination of a permanent neuropsychiatric disability at the present time will save the government \$35,000 over the next twenty years, or if the neuropsychiatric examinations would eliminate three men in the course of one day it would save the government \$100,000.

2. The cost of the training period: Of equal importance is the tremendous expense and waste to the government of the training period that each individual has undergone prior to his breakdown. This cost can hardly be estimated but is probably exceeded by the damaging effect on the morale of the squad or company to which such an individual belongs. The army men stress very heavily the blow to the morale from a neurotic or particularly from a psychotic outbreak in a soldier.

3. The cost to the individual: One must reckon also the cost to the man himself. Whether he becomes again a ward of the state or remains in the service as a ward of the government in no way relieves the expense of the situation. The loss is much more impressive when we recognize that a considerable number of men who break down in the Army and break down relatively early in their enlistment would in all probability not break down if they continued in civil life. In other words, the circumstances of army life with its many stresses and strains produce breakdowns in individuals who in civil life under more protected circumstances could continue to be productive citizens.

4. Army Experience with Neuropsychiatric Problems: It should be helpful to the draft board examiners to know of the psychiatric experiences relayed to us by many army officials, both line officers and medical officers, particularly with regard to certain erroneous ideas and attitudes which are prevalent among laymen, and unfortunately even among examining board physicians. The first of these is an attitude expressed by the examining board physicians relative to a queer lad, about as follows: "I've known him all his life and he has always been that way and there is no reason why he can't go into the service." The examining physician may believe that since he has known the individual for years and known that he has not broken down he has some basis for such a statement. The fact that his queerness itself indicates a precarious adjustment is a very good reason for not subjecting him to the severe discipline of the army. Knowing that the man is queer and eccentric

is sufficient reason for referral to the advisory psychiatrist for a psychiatric opinion before approval is given for enlistment or induction.

A second undesirable attitude is expressed by the draft board physician with some emotion when he says, "He is just putting that on to escape his duty." When a man is "putting on" some symptom or behavior, our social indignation may be justifiably raised, but our psychiatric judgment should indicate that the Army does not want individuals who fake, who malinger, who are obviously sufficiently maladjusted as to develop some sort of performance to evade their duty. If they do it to evade the draft board they will continue to do it in the Army and the army medical men are very definitely opposed to the acceptance of such an individual.

A third attitude somewhat similar to the last is that of expressed anger on the part of a draft board examiner towards an individual who has his teeth pulled out to evade the service. Granted that this individual is a social liability, it is all the more reason why, even though he does such destructive things to himself that the Army is no place for him. The Army of today does not include Labor Battalions, and as a consequence every man takes his turn at various rounds of duty. If an individual will go to the extent of having his teeth extracted to evade Army service, the chances of forcefully making him fit into the Army situation are extremely poor.

A fourth attitude not infrequently expressed by laymen, and even by physicians toward the draftee who is a little run down or a bit nervous, is that "The Army life will build him up." Again, the Army physicians as well as the line officers protest against regarding the Army as some sort of a health resort and do not want the physically undernourished or the psychologically handicapped.

Last, and perhaps most common is the erroneous attitude that a man can be sent to the Army as a place for learning discipline. Such an attitude has prevailed for many years and one might best summarize it by indicating that if a man is not capable of managing himself we do not want, nor can we count on him defending our homes. If he is not reliable, not to be trusted he has no place in the Army, and it is important to stress that the officials of the Army do not want our military organizations to be regarded as, nor to serve as, a correctional organization for "bad boys."

A second valuable educational opportunity for the advisory board psychiatrist in relation to the members of the draft board examiners might be that to present to them a technique for the neuropsychiatric examination, and a list of signs, symptoms, behavior and character traits to be observed by all of these

board members. One is confronted with the problem that the draft board members are voluntarily giving their time and have done so very generously, but in part for this same reason, are anxious to cover as much territory in as short a time as possible. The result has been to run as many registrants "through the mill" in as short a time as possible, with each physician on the board taking some responsible job, examining anthropomorphic measurements, examining a certain system or set of organs, and usually with no one assigned to evaluate the personality traits and characteristics of the individual as a total fighting unit.

For this reason it seems desirable where such might be arranged that the advisory board psychiatrist present an abbreviated neuropsychiatric examination to the entire group of examiners, with the hope that insofar as possible they would become more aware of various indications of neuropsychiatric problems and be able to refer more intelligently the individual for a consultation with the advisory board psychiatrist. Various of these condensed neuropsychiatric examinations have been outlined in the literature. While it is true that in the induction board the psychiatrist is limited to one, two, or at the most three minutes, but this is not true of the draft board examiners nor the utilization of the advisory board psychiatrist. On the contrary, there is no time limitation, and in some instances it has been possible for the neuropsychiatrist to sit in as a member of the examining board, spending an average of fifteen minutes with each registrant. Even though this is possible it has been estimated that fifteen per cent of the neuropsychiatric disorders would probably be missed. On the other hand, a considerably larger number will be detected. The use of a report form is a matter of individual choice, but it should be pointed out very clearly to every examining physician that in the absence of some definite notation of abnormality on the original physical examination blank, the individual has absolute claim against the government for any disability which subsequently appears. In other words, the legal evidence indicates that the absence from the physical examination report of any notations of disability leaves no other conclusion than that the abnormality was not present at the time of the examination. This very minor detail has led to an almost incalculable cost to the government of veterans who made claims because of disorders which were morally certain to have existed long prior to the original physical examination. The fact that it was not recorded, however, give the veterans' bureau no ground on which to refuse compensation or responsibility for treatment.

THE EXAMINATION FUNCTION

As has been indicated, under the present set-up the advisory board psychiatrist examines only those registrants who are referred to him by the medical board of examiners. For these cases, however, there is no limitation of time for the examination except as imposed by the psychiatrist himself.

As to the method, it is practical to arrange for a private appointment with the registrant. The observation of the individual's total response is extremely valuable data, and almost all reports of advisory board psychiatrists indicate the advisability of using a neurological examination as a vehicle for the psychiatric evaluation. It is recommended, for instance, that a patient's response to the examination be judged from many angles: What he does while he is waiting for the appointment in the waiting room, whether he comes as a result of reference from the board or an appeal on his part or his parents' part, how he enters the room, how he behaves during the course of the preliminary interview, how he responds to the request to disrobe, his responses during the course of the neurological examination, and finally his attitude when he knows the results of the completed examination.

Various fields of investigation have been suggested in the abbreviated neuropsychiatric examination, including particularly education, occupation, family and social history, behavior disorders and psychosomatic complaints. The majority of the more important neuropsychiatric syndromes are detectable only through historical evidence and psychological examination.

The examination is reported on page three of the physical examination form number 200; as has been suggested above, it is desirable even though it makes a little additional paper work for the advisory board psychiatrist, to keep a record of his findings, and submit these directly to the officer in charge, rather than giving them to the registrant. Since the advisory board of specialists does not meet as a group, the determination of classification is left entirely to the discretion of the officer in charge of the board, who bases his evaluation on the report of the specialist's consultation.

MORALE RESPONSIBILITIES

In addition to aiding the local draft board examiners to carry out the psychiatric examination on referred cases, the psychiatrist perhaps has a moral though unspecified responsibility for aiding in the maintenance of the civilian morale. Because the very nature of his work entails a constant contact with the mental life of people (much more so than even the average physician), and his daily work is concerned particularly with the emotions and feelings of

people, theoretically he should be able to contribute to the building and maintaining of civilian morale.

In the face of the present emergency when thousands, and within a few months even millions, of men will be inducted into the Army and with an international situation which makes everyone feel varying degrees of uncertainty about his own person, his home, his business, his friends, there is an extreme necessity to maintain morale. Insofar as this concerns the general public health it is a responsibility of the entire medical profession. In view of the psychological factors involved, the psychiatrist perhaps has a very special responsibility. One minor but tangible attack on this problem is his responsibility in relation to the draft board. The necessity for speed in preparing for defense and the widespread sharing of responsibility for its preparation in widely varying fields entails an unwieldy organization with the many problems of incoordination, slow motion, conflicting or unclear orders and the consequent mistakes. Our immediate concern of the advisory board psychiatrist is his problem of aiding in the elimination of those individuals unsuited for military life. It has been pointed out in these remarks, as well as in those of many others, that there are difficulties in the machinery, unclear divisions of responsibility among various elements of the draft board; there is also the very real difficulty of lack of psychiatrists. We should keep in mind, however, that if we are in earnest to build up the very best defense unit possible in the form of an army, and that the defense of our homes and our families and our mode of living is fundamental, no obstacle should be insurmountable. When we add to this aim the additional fact that our conspicuous failure to eliminate neuropsychiatric disorders in the last World War cost us an average of \$35,000 a man, this fact too is an additional stimulus of tremendous importance to overcome such comparative trivialities as "red tape," lack of time, distance, lack of psychiatrists and the other obstacles which seem to be cluttering up the machinery at present.

In summary, it has been pointed out that the advisory board psychiatrist has a tremendous responsibility in that under the present setup there is no one on the regular examining board who has the function of evaluating the individual as a total fighting unit. In consideration of this fact it is desirable that the advisory board psychiatrist present to the examining board as much information about the past experiences of neuropsychiatric casualties as possible, that he present the neuropsychiatric point of view of evaluating the individual as a total unit, and the signs and symptoms, the behavior disorders and character traits that he, the examining physician, would be ob-

serving as indications of the individual's fitness for army service. In the event that the registrant is not acceptable, the result of the examination should be regarded and explained as a means of vocational classification, rather than merely as a "rejection" from Army service. In this way the individual registrant is not stigmatized by being "rejected" but very possibly may be assigned to other equally important functions in the defense program.

EPIGASTRIC HERNIA IN A CHILD

Maurice A. Walker, M.D.

Kansas City, Kansas

A white girl, aged eight years, began to have epigastric cramping pains in the summer of 1940, usually after lying down at night. Her appendix was removed elsewhere after several attacks. When she returned home from the hospital, the pains continued and became more severe. At this time, the mother first noticed a small swelling in the epigastric region which gradually increased in size. When first examined by me on March 22, 1941, there was a soft rounded mass one and one-half inches in diameter midway between the umbilicus and the tip of the xiphoid process. This protrusion could not be replaced within the abdomen.

At operation, on March 24, 1941, a typical epigastric hernia was found. The opening in the fascia was one-half inch in diameter, with pro-peritoneal fat forming the mass previously described. The fascia was incised on each side of the hernial ring, the fat replaced in the abdomen, and the fascia overlapped horizontally with two rows of interrupted mattress sutures. Convalescence was uneventful.

Reports Another Probable Instance of Sensitivity to Vitamin B₁: Another probable instance of sensitivity to thiamine hydrochloride (vitamin B₁) is cited in The Journal of the American Medical Association for August 23 by Leon Schiff, M.D., Cincinnati.

The patient had received many injections of the vitamin after some of which she became nauseated and vomited. However, about two minutes after her last injection a reaction set in and she went into a coma. Artificial respiration and treatment with stimulating drugs were necessary. On return of consciousness questioning brought out that she had had short bouts of sneezing a short time after three or four previous injections. Skin tests done with two of the preparations of the vitamin given the patient revealed a sensitivity.

"This experience," Dr. Schiff believes, "strongly suggests that the shock suffered by the patient may have been due to sensitivity to solution of thiamine hydrochloride. . ."

President's Page

To the Members of The Kansas Medical Society:

The duty of the medical profession is now clear. A devastating war is upon us, each must answer his nations call in whatever capacity designated by the authorities.

We, as medical men, must trust our assignment to serve to those authorized by our Government. Quite complete medical data has been compiled for use in the emergency and we may expect prompt and explicit demands upon our services.

This is the supreme test of organized medicine, in supplying the Army and Navy with qualified men of our profession from all its general and specialty groups, in order that the best medical service in the world may be rendered our armed forces and war industries.

Second only, to the above demands on our profession, is the adequate care of the civilian population by those not directly serving the military forces and the war industries.

Let us all, as Kansas physicians, subordinate ourselves to the will of those in authority in assignment duties.

May Kansas through her medical personnel further demonstrate her willingness to serve in this the most critical time of our nation's history.

Let me at this time, through our Journal, convey to each member and officer of our Society, a Christmas greeting and for the approaching New Year may we all look with confidence for the final victory of our nation and her allies over their treacherous adversaries.

Sincerely yours,

Clyde D. Blake M.D.

EDITORIAL

NATIONAL EMERGENCY

For many years it has been customary for the Journal to include in its December issue an editorial of well wishes for a Merry Christmas. Such an editorial in the December, 1941, issue would have only a hollow ring. With the death, destruction, and tragedy which exist in most of the civilized countries of the world and with the trials and tribulations which our own country will undoubtedly experience for an unknown number of future years, it is very clear indeed that this year no one can have the usual spirit of Christmas.

We have no doubt that the United States will win its part of the present war. It has the facilities and its people have the will and the ability to accomplish that result. It is equally true, though, that every person in this country will need to contribute all-out assistance in making possible the united effort only through which victory can be accomplished.

A considerable part of this responsibility will fall upon the medical profession. The Army and the Navy will need a vast number of physicians who must be supplied from civilian sources either voluntarily or through selective service methods. There is no question but that this need will be supplied and immediately so. One of the proudest traditions of American medicine is the record that it has always quickly and loyally arisen to the assistance of our country in its hours of need. The procuring of the necessary number of physicians will create a civilian service problem of magnitude. Those who remain at home will serve their country through hours of extra work, through the maintenance of part time offices in unserved communities, and in countless other ways. Likewise, by reason of the methods of modern warfare the profession will find it necessary to become the source of leadership for development of civilian defense and for the care of possible civilian casualties.

First let us fill the ranks of the Army and Navy medical corps and then organize the home front.

Kansas medicine must accept its part of this obligation eagerly and effectively. It will do its part to "Keep 'em flying."

DISTRIBUTION AND STRAINS OF C. DIPHTHERIAE

In a paper, delivered before the American Public Health Association in October, Dr. Martin Frobisher of Johns Hopkins University, reveals some very practical and modern concepts about the various strains of the *C. diphtheriae*. These various strains were obtained from various parts of the United States, so cannot be interpreted as indicating the findings in local strains. His studies are based upon some 2000 strains, obtained from seventeen different states, from New York to California.

Carrier surveys reveal that the *gravis* or *mitis*, virulent or non-virulent strains may predominate, in fact may be the only strain found in a certain locality. No doubt many reported epidemics, without clinical findings are definitely due to the non-virulent strains. Some authorities report from fifteen to twenty per cent of isolated diphtheria, to be of the non-virulent type. This percentage no doubt is too low, considering Dr. Frobisher's observations.

Many isolated strains of the *gravis* type of the *diphtheriae* bacillus in carriers were proven, upon animal inoculation to be due to non-virulent strains.

It is extremely interesting, as pointed out by Dr. Frobisher, that changes may occur from year to year in the *gravis* and *mitis*, virulent and non-virulent strains, indicating that it would be dangerous to assume that a given case, under observation, might be either, because previous cases were proven to belong to a certain classification.

Many strains isolated in Kansas have proven to be of the non-virulent type, as proven by animal inoculation.

Dr. Frobisher makes a further observation, that probably, not more than about one strain of *C. diphtheriae* in over one hundred in the United States is of the virulent and genuinely *gravis* type, except in a few isolated or localized area.

The *gravis* type of *C. diphtheriae* is not an important health problem at present, but may become so at anytime.

For years, the guinea pig has been considered as the animal of choice for testing virulence of *diphtheriae*. More recently, workers in the field, conclude that in many respects, seven to fourteen day old chicks are more desirable.

Wide spread diphtheria immunization may be a factor in the prevalence of non-virulent strains.

In no way does this article indicate a desire to weaken the immunization program, but rather to strengthen it, considering the possibility that immunization may be the cause of low virulence of many strains of *C. diphtheriae*.

THE NEW FEDERAL FOOD, DRUG AND COSMETIC ACT

The Federal Food and Drug Administration of the United States Department of Agriculture has been exerting considerable pressure to prevent the promiscuous sale of dangerous and harmful drugs to the public. Some physicians may not agree with the government in defining what is and what is not a dangerous drug; it would seem difficult, however, to find fault with the general policies enunciated in the New Federal Food, Drug and Cosmetic Act. In return for a moderate increase in prescription writing on the part of the physician, the public should enjoy considerable more protection, the druggist should be less frequently forced into the unwelcomed position of selling potent and dangerous drugs over the counter, with the vague hope that they will be administered correctly. Also the valuable and pleasant physician-druggist collaboration in the dispensation of drugs for the health of the community will be further enhanced. Few laymen and not all physicians realize that a proprietary preparation costs no more when dispensed as a prescription in an unlabeled box or bottle than it does when dispensed in the original wrapper which may contain propaganda for the use of the drug and which may come close to claims which might be a cause for calling the preparation misbranded. Among the drugs considered dangerous, unless administered by one who has been trained to make an accurate diagnosis and who is familiar with the established indications and contra-indications are: sulfanilamide and its derivatives, thyroid, benzedrine sulphate tablets, aminopyrine, cinchophen, neocinchophen, cantharides, aconite, chrysarobin, chrysophanic acid, colchicine, colchicum, emetine, phosphides, phosphorus radioactive drugs, thiocyanates, Causalin, and Sedormid. This list is not complete and must of a necessity change as scientific facts develop. After interpretation of the new law, the Kansas State Board of Pharmacy has advised its members that it is preferable to classify, under the prescription list only, amytal, phenobarbital and other barbituric acid derivatives. It becomes an increasing responsibility of the physician and druggist to see that prescriptions

are not refillable unless on specific indication.

Theodore G. Klumpp, M.D., in a recent illuminating article on the Federal Food, Drug and Cosmetic Act in the Ohio State Medical Journal for September, 1941, discusses the wide scope of this legislation. Klumpp points out that as physicians, we too infrequently ponder the question of whether or not the drug we administer or prescribe is what it is supposed to be, whether it is up to its purported strength, quality or purity, and whether it is safe to use. The maintenance of the strength, quality, quantity and purity of the drugs is not automatic as illustrated by the numerous actions that are taken each year by the Food and Drug Administration against drugs that are adulterated. During the four fiscal years, July 1, 1936, to June 30, 1940, 243 samples of estrogenic preparations were examined, of which 110 or 45.7 per cent failed to meet the requirements of the Food, Drug and Cosmetic Act. Recent investigations have indicated that there is appearing on the market subpotent digitalis from a number of manufacturers. In a recent law suit, the government proved that the digitalis in question was fifty per cent of the labeled potency.

Of more interest perhaps to the physician is the new drug section of the act. Such an act had been under discussion over the five years, 1933 to 1938. It had been so vigorously opposed by the industries involved, it became evident that such a bill would have no chance whatever of passage by Congress.

In September, 1937, a drug manufacturer placed on the market a wholly untried combination of sulfanilamide in diethylene glycol and called it Elixir Sulfanilamide. One hundred five authenticated deaths resulted from the marketing of this drug. With this tragedy in mind, Congress began consideration of a provision which would prevent the occurrence of similar catastrophies from untried drugs. Coincidentally, another drug, the so-called Rex152, an alleged cancer cure, became contaminated with tetanus toxin and this resulted in the death of twelve individuals. These tragedies, so closely succeeding one another, undoubtedly added considerably to the impetus which eventually brought about passage of the new act. According to Klumpp "it is not an overstatement to say that for the first time in our history all drug manufacturers are obtaining chemical, pharmacological and clinical data on new drugs before placing them on the market."

That the physicians have a considerable stake, in the effective working of such legislation, becomes obvious. The new Federal Food, Drug and Cosmetic Act marks a distinct advance in the production, marketing and clinical administration of drugs in the United States.

MEDICAL SCHOOL

ASCORBIC ACID IN THE TREATMENT OF ARSENICAL DERMATITIS

Mahlon Delp, M.D.*

Kansas City, Kansas

Since 1937, we have employed ascorbic acid both as a prophylactic and therapeutic agent for various types of arsenical reactions encountered in the Out Patient Department of the University of Kansas Hospitals. Ample patient material has been provided by the antisyphilitic therapy clinic here and at other such clinics in the immediate vicinity. Perhaps significantly all such patients belong to a very low income group.

Although early and unorganized attempts were made to treat several types of complications of arsenical therapy including nausea, vomiting nitritoid reactions, thrombocytopenic purpura and all forms of arsenical dermatitis it was found suitable for more accurate observations, to limit the study to dermatitis for a time. The absence of psychic factors, the ease of diagnosis, and the accuracy with which therapeutic response could be observed, made this choice seem desirable.

The development of a method for the accurate determination of the blood plasma ascorbic acid levels, made possible more complete preliminary observation upon our patients as well as the course of their treatment.

In September of 1940¹, a preliminary report was made covering three groups of patients. The first group of previously untreated syphilitics selected only in so far as they were free from other disease. The second group represented a number of patients followed through regular courses of therapy with both arsenic and bismuth. During this time blood plasma ascorbic determinations were made each week. The third and last group consisted of five cases of arsenical dermatitis treated with ascorbic acid.

Since this initial report we have collected six additional cases of arsenical dermatitis successfully treated with ascorbic acid and also one case of exfoliative dermatitis recovering during ascorbic acid therapy. This last group of cases with additional information

regarding the blood plasma ascorbic acid levels during treatment are the basis of this report.

Early animal experimentation by Sulzburger and Oser² as well as by Cormia³ regarding arsenical sensitivity and vitamin C carried the implication that high plasma vitamin C levels were associated with lessened toxicity of arsenic. This work has been further supplemented by Cormia⁴ with both clinical and experimental observation. More recently Bundesen⁵, et al have contributed more evidence of the detoxifying effect which ascorbic acid has in patients showing arsenical sensitivity in the form of positive skin tests. The earliest strictly clinical use of ascorbic acid as a detoxifying agent in the arsenic sensitive patient was that of Dianow⁶ and shortly after that of Landfisch⁷.

METHOD

The macro-photocolorimetric method of Mindlin and Butler⁸ was used for the vitamin C determination. Oxalated plasma was obtained and precipitated within thirty minutes after the blood was drawn. All specimens were obtained from patients who had not taken food for at least six hours.

DERMATITIS TREATED WITH ASCORBIC ACID

This group of individually studied patients represents seven with arsenical dermatitis and one with exfoliative dermatitis of unknown etiology. Ascorbic acid* as indicated in the accompanying summaries and charts was administered. All except one were treated ambulatory and nothing other than ascorbic acid orally and intravenously was employed.

CASE REPORTS

Case 6, H. B. Cl. No. 166716. Colored male, age thirty-five. Entered the clinic ten years previously with sero-positive primary syphilis but took no treatment. Entering again in 1940, for treatment of an infected sebaceous cyst, routine treatment for latent syphilis was started. The patient received two courses of neoarsphenamine, one full course of bismuth and twelve injections of the second course of arsenic when he developed a generalized dermatitis with marked edema of the face and extremities, as well as vesiculation and weeping of all skin.

Unfortunately, this patient was started on oral ascorbic acid at a dosage of 300 milligrams daily four days previous to blood plasma determinations. October 28, 1940, daily intravenous doses of 300 milligrams was started. At the end of six days all vesiculation of the skin was gone. Mild edema remained. With the fifteenth intravenous injection, recovery was complete. Here the apparent quicker response to intravenous medication over oral medication seems indicated.

Case 7, M. K. Cl. No. 134168. Colored female, age thirty-six. She entered the clinic for treatment of a recurrent arsenical dermatitis on September 18, 1940. Twenty years previously the patient had developed a dermatitis

*From the Department of Internal Medicine and Hixon Laboratories for Medical Research, University of Kansas School of Medicine, Kansas City, Kansas.

*Sodium Ascorbate furnished by George A. Breon and Company.

Patient Clinical Number	Neosphenamine (total dosage in gms)	0.0	0.45	0.90	1.35	1.80	2.25	2.70	3.15
181826	0.21	0.17	0.17	0.33	0.60	0.31	0.72	0.97	
182131	0.08	0.06	0.20	0.26	0.13	0.20	0.19	0.28	
182166	0.04	0.12	0.06	0.09	0.36	0.05	0.45	0.07	
182890	0.71	0.62	0.68	0.83	0.56	0.89	0.66	0.56	
183639	0.21	0.07	0.60	0.23	0.09	0.01	0.01	0.01	
183842	0.39	0.43	0.08	0.24	0.04	0.29	0.24	0.26	
183974	0.38	0.23	0.38	0.22	0.50	0.47	0.50	0.24	
189774	0.34	0.36	0.42	0.35	0.31	0.73	0.30	0.26	
184945	0.02	0.25	0.21	0.16	0.12	0.13	0.09	0.29	
185161	0.36	0.17	0.04	0.19	0.18	0.20	0.01	0.17	
97594	0.52	0.62	0.61	0.76	0.76	0.37	0.48	0.42	
188401	0.01	0.12	0.41	0.37	0.12	0.07	0.05	0.09	
189092	0.22	0.41	0.30	0.41	0.01	0.21	0.38	0.10	
147600	0.17	0.24	0.01	0.53	0.53	0.39	0.52	0.92	
184912	0.46	0.89	0.63	0.56	0.38	0.14	0.48	0.44	
159213	0.12	0.23	0.13	0.01	0.01	0.01	0.01	0.06	
187873	0.06	0.01	0.01	0.01	0.01	0.18	0.54	0.18	
91807	0.05	0.35	0.01	0.60	0.03	0.01	0.01	0.59	
158110	0.36	0.43	0.09	0.26	0.47	0.55	0.46	0.31	
184247	0.91	0.95	0.78	0.76	0.74	0.72	0.86		
115662	0.16	0.36	0.62	0.37	0.42	0.26	0.21	0.17	
131502	0.68	0.78	0.27	0.11	0.34	0.22	0.02	0.50	
186124	0.21	0.22	0.48	0.41	0.52	0.18	0.32	0.42	
183560	0.22	0.01	0.20	0.27	0.21	0.99	0.33	0.01	
184503	0.07	0.09	0.01	0.01	0.12	0.48	0.01	0.32	
185148	0.22	0.26	0.15	0.01	0.03	0.05	0.01	0.17	
185361	0.13	0.27	0.40	0.32	0.56	0.51	0.37	0.38	
	0.28	0.32	0.29	0.32	0.30	0.31	0.30	0.32	

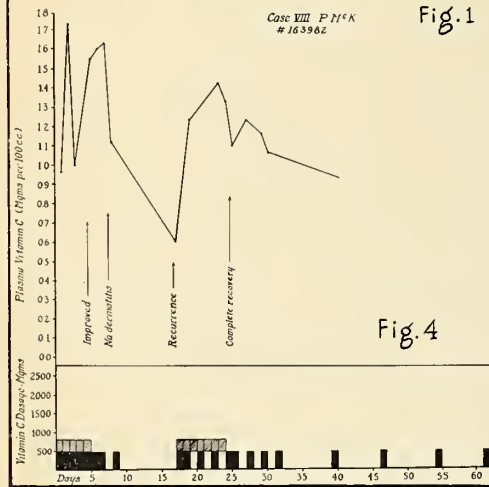


Fig. 1

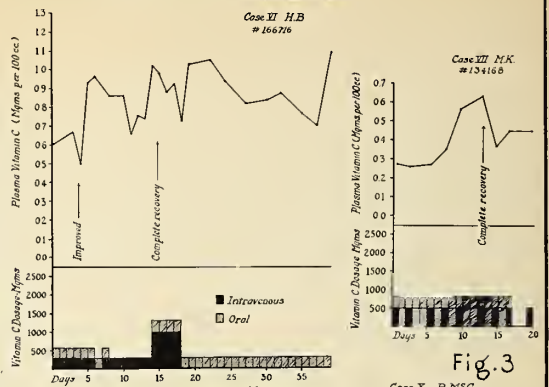


Fig. 2

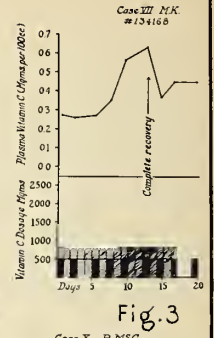


Fig. 3

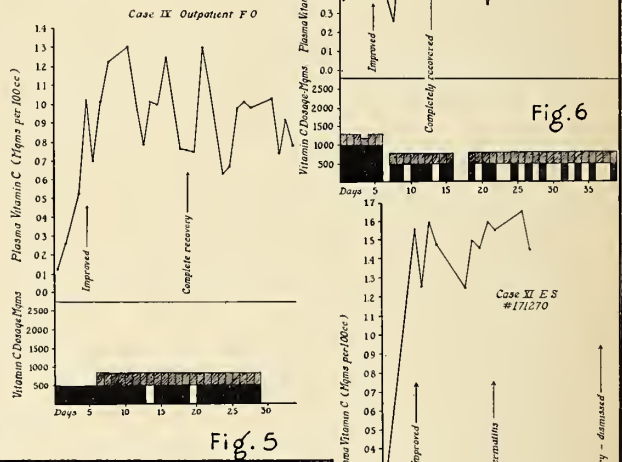


Fig. 4

Fig. 6

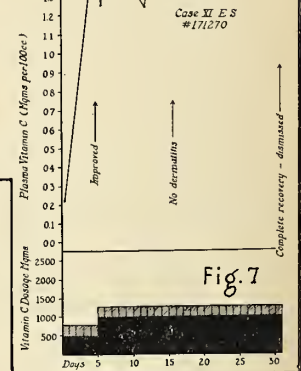


Fig. 7

Fig. 1. Blood Plasma Vitamin C Levels During Routine Administration of Neosphenamine. Fig. 2. Case VI. Plasma Vitamin C Levels During Observations. Fig. 3. Case VII. Plasma Vitamin C Levels During Observations. Fig. 4. Case VIII. Plasma Vitamin C Levels During Observations. Fig. 5. Case IX. Plasma Vitamin C Levels During Observations. Fig. 6. Case X. Plasma Vitamin C Levels During Observations. Fig. 7. Case XI. Plasma Vitamin C Levels During Observations.

during administration of neosalvaran. When again placed on neosphenamine at time she developed a dermatitis following the first intravenous injection. At the time she was seen for treatment one week following the onset of the dermatitis, the lesion was fairly mild. Edema of the face, ears, eyelids, and extremities was only moderate. Actual vesiculation was limited to the cubital folds, neck, axilla, and inguinal regions.

Ascorbic acid intravenously and by mouth in dosages of 300 milligrams was begun on September 18, 1940. Intravenous injections were given three times weekly. Oral medication was given daily. Recovery was prompt. Within twelve days all evidence of dermatitis was entirely gone.

Case 8, P. McG. C1. No. 156634. Colored female, age thirty-one, entered the dermatological clinic from an outside source for treatment of an arsenical dermatitis. The patient had developed an urticarial type of lesion following

the third injection of neosphenamine in the second series. When the skin lesion was reported the medication was changed to mapharsen. This injection was followed by a generalized dermatitis of the pityriasis rosea type, with edema and vesiculation about the face, eyes, and neck.

The patient was started on ascorbic acid intravenously only on January 31, 1941. The first six doses given were of 100 milligrams each, but all subsequent dosages were of 500 milligrams. No oral medication was given. Marked improvement was noted within one week. Recovery from the dermatitis was complete within four weeks. Several scalp lesions which became secondarily infected complicated the recovery.

Case 9, Out Patient, F. O. White male age forty-seven, referred for treatment of an arsenical dermatitis which developed following the fifth intravenous neosphenamine in his second course of routine treatment of latent syphilis.



Fig. 10. Secondary Syphilis. Fig. 11. Same Patient Following Third Treatment with Maphorsen and Ascorbic Acid.

The dermatitis which was of one week's duration was very severe. The skin of the entire body was in various stages of exfoliation and vesiculation. Edema of the extremities was marked. The patient had accumulated a total of eleven pounds of edema within one week. Discomfort was profound. At the time the patient was first seen he had a temperature of 101.6 degrees and complained bitterly of frequent chills.

Treatment with intravenous and oral ascorbic acid in doses of 500 to 300 milligrams respectively was started January 10, 1941. Improvement in patient's subjective symptoms was noted within twenty-four hours. The skin was healing within one week. The edema disappeared at the end of fourteen days. All evidence of the dermatitis was gone at the end of twenty-one days. Therapy was continued, however, for a period of six weeks because of fear of recurrence.

Case 10, P. McK. C1. No. 163982. White female, age forty-one. Entered the clinic with symptoms referable to a menopause syndrome. Routine examination showed the presence of latent syphilis. Routine treatment was started. During the first course of neoarsphenamine, ascorbic acid determinations were made on the blood plasma. The lowest value found was p. forty-nine milligrams per 100 cc of blood, the highest 0.84 milligrams per 100 cc of blood. Following the third intravenous injection of neoarsphenamine in the second course of neoarsphenamine the patient developed an immediate urticarial reaction followed by a generalized erythema of the skin. The lesion progressed within four days to a point where weeping excoriated lesions existed at all skin folds and pitting edema was present in the extremities. Discomfort, and burning of the skin was moderately severe.

Treatment with ascorbic acid intravenously and orally was started September 13, 1940. The intravenous dose was 500 milligrams and the oral dose 300 milligrams. At the end of six days the patient's skin was clear and she failed to reappear for treatment for nine days. At this time she came in with a definite recurrence and then willingly continued treatment about three times weekly for another three weeks when antiluetic therapy with bismuth was again started.

Case 11, E. S. C1. No. 171270. White female, age seventy-nine, entered the clinic from out-state with a gen-

eralized exfoliative dermatitis of six months duration. The cause of the dermatitis was not clearly established. Apparently the patient had had no contact with arsenical preparations. The history revealed only that a mild dermatitis of the arms suddenly became much worse and typically exfoliative in character following painting the floor and subsequently washing the arms with gasoline.

Even though the dermatitis was not due to arsenic ascorbic acid therapy was begun August 13, 1941. Intravenous doses of 500 milligrams daily and oral doses of 300 milligrams daily were given. Improvement was noted with forty-eight hours. Recovery was complete in seventeen days. Treatment was continued for thirty-one days when the patient was dismissed.

Case 12, M. C. No. 94134. White female, age fifty-two, entered the hospital October 29, 1941 with the chief complaints of dermatitis and fever. The onset of her illness was five days prior to her admission, at which time she received an unknown amount of neoarsphenamine intravenously. Some of the medication was inadvertently injected outside the vein producing much pain. Within twelve hours the patient developed a generalized erythematous rash over the entire body. Itching was severe. Swelling of the skin of the face, eyelids, and lips became marked. Associated with these symptoms the patient ran a fever of 103-104 degrees. Attempted treatment at home was unsuccessful and hospitalization followed.

It was learned that twenty-five years previously the patient had received mercury by inunction and apparently one intravenous injection of arsphenamine for syphilis. At that time she suffered a mild erythema of the skin which cleared spontaneously.

Upon admission the patient's temperature was 104 degrees. This gradually decreased but with daily elevations for six days when it returned to normal. Significant physical findings were limited to the skin. The skin of the face, arms, trunk, and lower extremities was intensely erythematous and edematous. Numerous purpuric spots appeared on all extremities. Weeping and vesiculation especially about the face and all folds of the skin was quite evident.

Initial laboratory work showed the following: urine—albumin one plus, hyaline casts. Red blood count 3,120,000 with sixty-eight per cent hemoglobin; white blood count 11,200, poly eighty-three per cent, lymphocytes six per cent,

eosinophiles ten per cent. Platelets 80,000. N. P. N. 37.5, creatinine 1.8, sugar seventy-four. Vitamin C determination was unfortunately not done until the patient's third hospital day following two days of ascorbic acid therapy. It was then 0.80 milligrams per 100 cc of blood.

On admission the patient was given two grams of ascorbic acid intravenously immediately. For the following six days she received 800 milligrams by mouth each day and two grams intravenously each day. The dosage intravenously was then decreased to one gram daily but the oral dosage maintained. Blood plasma levels of vitamin mounted immediately above 1.2 and upon dismissal were above two milligrams per 100 cc blood.

Clinical improvement was evident within forty-eight hours. Definite recession of the disease was evident at the end of seven days. Exfoliation particularly of skin of the hands continued. All erythema disappeared by the seventh day. She was dismissed nineteen days after admission with only mild residual roughness of the skin. This patient simultaneously with the dermatitis evidenced a purpura and a thrombocytopenia. The platelet count promptly returned to normal and the purpura disappeared early in the course of therapy.

DISCUSSION

All of our patients with one exception have been patients showing unquestioned clinical evidence of arsenical dermatitis. The response of such patients to treatment in the past has been very unsatisfactory, and therapeutic claims for any agent have not met with general acceptance. This group is small but the response to ascorbic acid seems uniform and follows certain lines. All patients have had first, symptomatic relief from burning and itching of the skin usually within forty-eight hours. Then follows recession of the erythema, edema and vesiculation of the skin. Definite healing was evident within a week. Recovery was usually within two weeks. Treatment has been continued longer in most for fear of recurrence, or begun again because of relapses following failure to continue treatment. Improvement and recovery parallels forced increases in plasma ascorbic acid levels regardless of the initial level, and relapses have been associated with lowering of the plasma values.

Our efforts at predicting the probable onset of arsenical sensitivity by the presence of a low ascorbic acid blood level have failed. Many patients with low values show no clinical reactions. This problem is complicated further by our failure to observe in a group of twenty-seven cases any actual depression of their ascorbic acid values at any time during the routine administration of arsenic. It has not even been uniformly true that those developing dermatitis had low values at the onset or early in the disease. We are then still left with the problem of selecting the sensitive patient. It must further be born in mind that he may develop this sensitivity at any time throughout the course of his treatment although he might well have been previously insensitive.

Ascorbic acid is a powerful reducing agent. Cormia³ has suggested it is this characteristic accounting for its detoxifying properties. Since it is normally present in the body and can be given with impunity its employment in many intoxication states might be implied. The therapeutic doses of ascorbic acid have varied widely in our series. The earliest patients received doses of fifty milligrams daily or three times weekly. The last case received 800 milligrams daily by mouth and additional dosages of two grams intravenously each day. Undoubtedly much of such large doses is wasted but tolerance to the substance is no problem.

At present two patients having previously had arsenical dermatitis and one previously showing extensive urticaria following arsenic are tolerating their arsenic administered simultaneously with 500 milligrams of ascorbic acid. One very sensitive patient does not tolerate the arsenic given in the same manner. Such prophylactic administration must be studied more intensively.

Simultaneous administration of 400 milligrams of ascorbic acid and maphorsen in doses of .04 grams has had no delaying effects upon the disappearance of secondary syphilitic skin lesions under our observation. Note Fig. XI XII. Again we must not conclude prematurely that ascorbic acid does not neutralize the therapeutic effectiveness of arsenicals without more study.

We present one case quite definitely not arsenical dermatitis. The apparent response to treatment is similar to that of the arsenical sensitive patients. It is presented without comment simply as an interesting response.

SUMMARY

Supplementing an earlier report of observations upon five cases of arsenical dermatitis treated with ascorbic acid, seven similar cases and one additional case of exfoliative dermatitis are reported. All patients in this group showed a very favorable response. Additional observations on the plasma vitamin C levels of patients receiving routine arsenical therapy do not show a depression of these values.

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NEWS NOTES

NATIONAL DEFENSE

The following communication was received from Dr. Sam F. Seeley, Executive Officer of Procurement and Assignment Service of Defense Health and Welfare, on December 12:

"In view of the urgency of the present National military situation, the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians of the United States is taking this means of transmitting to you a formal request that the Committee on Medical Preparedness of your State hold itself in readiness to give its immediate cooperation in the conduct of the mission of the Procurement and Assignment Service.

There will be a meeting of the members of the Committee on Medical Preparedness of the American Medical Association in Chicago at the Headquarters of the American Medical Association at 10:00 a.m. on December 18, 1941. At this time the Directing Board of the Procurement and Assignment Service will meet with the Medical Preparedness Committees of the American Medical, American Dental, and American Veterinary Medical Associations. At that time a formal program will be drawn up which will involve the organization of committees within the State, district, and county medical, dental, and veterinary organizations of the country. It is anticipated that the functions of the Procurement and Assignment Service will be carried out through the committees set up in Corps Areas, States, districts, and counties and that committees will be formed in each of these areas which will be asked to assist in performing the duties of the Procurement and Assignment Service. These agencies will be requested to make an immediate survey of the minimal needs of the civilian and industrial agencies of the areas involved and to submit to the Procurement and Assignment Service a list of those professional people qualified to carry out the organization to ensure adequate professional care in those localities. From this a list will be available of those who may be dislocated from their present locality to serve the industrial or military needs elsewhere. Upon completion of this survey these same committees will be asked to function for the Procurement and Assignment Service in the notification of those who have been chosen to serve in capacities which necessitate the removal of professional personnel from their present positions.

Further details will be issued as soon as possible after the Chicago meeting. You are invited to direct any suggestions to this office which may be considered at that meeting. It is requested that immediate steps be taken to draw up a tentative list of committee members who will serve in districts and counties within your State.

The Procurement and Assignment Service is designated to mobilize the entire medical, dental, and veterinary professions and to assist in the most effective utilization of their members in this National emergency. The whole-

hearted cooperation which has been received during the early period of development of the Procurement and Assignment Service has been a source of gratification to the Directing Board. It is the hope of the Directing Board that the number who will volunteer for service in order to meet the military needs will be sufficient and that the major function of the service will be to insure proper utilization of the profession in the civilian and industrial capacities. It is hoped that the present attitude of the profession is such that enforced service will not be necessary. Your cooperation in stimulating voluntary service is highly desirable.

It is hoped that you will pardon the lack of formality of this letter but the urgency of the present moment demands that this information be disseminated as rapidly as possible. It is, therefore, sent to you in mimeographed form, and further details will be forwarded immediately after the Chicago meeting."

CIVILIAN DEFENSE

The following telegram was received from Dr. George Baehr, chief medical officer of the office of Civilian Defense on December 9.

"Office of Civilian Defense requests you urge all hospitals to establish immediately emergency medical field units in accordance with plans outlined in the medical division bulletin number one and two and drill weekly. Where necessary reserve field units should so be organized with medical nursing and trained volunteer personnel derived from the community. Urge immediate action."

Bulletin number one referred to in the telegram is as follows:

"EMERGENCY MEDICAL SERVICE FOR CIVILIAN DEFENSE

I. Local Chief of Emergency Medical Service: An Emergency Medical Service should be organized as a section of the local defense organization in each area under a director responsible to the local Director of Civilian Defense. It is recommended that the local Chief of Emergency Medical Service be a physician of broad experience and administrative capacity, such as a health officer or an experienced hospital administrator. It should be his first duty to make an inventory of the community's medical resources and facilities, and to prepare local plans, develop an organization, and provide for the training of personnel to carry out the functions of the Emergency Medical Service outlined below.

II. Local Medical Advisory Council on Civilian Defense: The local Chief of Emergency Medical Service should be Chairman of a Medical Advisory Council. This Council might well include the local health officer, an experienced hospital administrator, a physician recommended by the local medical society because of his technical experience and executive ability, a registered nurse, and a representative of the American National Red Cross and other voluntary agencies.

III. Emergency Medical Field Units: In States on both seaboards and in vulnerable industrial areas in the interior, general hospitals, both voluntary and governmental, including Veterans' Administration Facilities and the Marine Hospitals of the United States Public Health Service, should organize Emergency Medical Field Units and assemble basic equipment. An Emergency Medical Field Unit should consist of two or more squads, and a physician should be appointed to command the entire unit. Squad leaders, in

turn, should be designated. The size of the Emergency Field Unit should be in proportion to the bed capacity of the parent hospital. All members of Field Units should be instructed in first aid,* including care of burns, prevention of shock, control of hemorrhage, emergency treatment of fractures and wounds, and in the technique of decontamination.

A. Personnel: 1. Small Squads: In hospitals of less than 200 beds, it is recommended that the Emergency Field Unit consist of two squads, one for each twelve-hour shift of the day. Each squad should be composed of two physicians, two or more nurses, and two or more orderlies or nurses' aides, and be capable of functioning, if necessary, as two separate teams. At least one Unit of this size is advisable for a population up to 25,000.

2. Large Squads: In hospitals of more than 200 beds the Emergency Field Unit should consist of two squads of four doctors, four or more nurses, and four or more orderlies or nurses' aides, one of the physicians in each squad to act as squad leader. Each of the squads should be on first call during a twelve-hour period of the day. The personnel and equipment of a squad should be divisible into four teams, capable of functioning if necessary at separate sites of disaster. At least one Unit of this size or two Units with small squads are advisable for populations up to 50,000.

3. In hospitals of more than 350 beds the Emergency Field Unit should consist of four or more large squads, each headed by a squad leader and capable of functioning, if necessary, as multiple teams. In these large hospitals at least two squads should be on call during each twelve-hour period of the day, alternating on first call on alternate days. An Emergency Field Unit of four large squads or two Units of two large squads each, are advisable for a population of 100,000. In large cities, the desirable minimum would be four large squads (sixteen physicians and assistants) per 100,000.

4. It will be advisable to organize physicians and nurses engaged in private practice in the area into reserve Emergency Field Units related to hospitals. In areas with small hospitals whose resident staffs cannot be depleted, the primary Emergency Unit of a hospital may be made up in whole or in part of practitioners from the community.

B. Transportation. A hospital ambulance, station wagon, small truck, or passenger vehicle will be adequate to transport the personnel of a squad and their equipment to the site designated by the local Director of Civilian Defense for the establishment of a Casualty Station. On return trips to the hospital with casualties such vehicle will be available for transportation of additional squads and equipment if required. Hospitals which do not maintain an ambulance service will find it necessary to provide for transportation, utilizing private or municipal ambulance service, small vehicles of the police, fire, or other municipal departments, station wagons, or passenger cars. Special racks (see separate memorandum of the Medical Division of the Office of Civilian Defense) can be installed in private ambulances and in station wagons and small trucks so that they may be utilized in an emergency for the transportation of four or more stretcher patients at a time.

Private vehicles recruited for ambulance purposes by the American National Red Cross or other agency should be assigned to a hospital or to a designated parking center under the control of a transport officer.

C. Medical and Surgical Equipment. The medical and surgical equipment for a squad should consist of a working supply for each physician's team and a reserve supply

of sterile dressings and equipment in drums or packs from which the working supplies of the teams may be replenished. The working supply of each team is best carried in a portable bag, or haversack provided with suitable compartments. A list suggesting minimum equipment will be available in a separate memorandum (Bulletin No. 2).

The provision of working supplies in a separate container for each physician will permit the squad of a Casualty Station to split off teams of one physician and assistants who can be dispatched to set up subsidiary First Aid Posts at other sites.

D. Casualty Stations and First Aid Posts. Upon arrival at the site of a disaster, the squads of the Emergency Medical Units which have responded to the appropriate alarm will set up Casualty Stations at the sites designated by the local Director of Civilian Defense. The location of a Casualty Station should provide safety, shelter, and accessibility. Stretchers, cots, and blankets will have arrived in a truck carrying the Rescue Squad of the police, fire, or other municipal department. Until released by authority of the local Director of Civilian Defense, the physicians and nurses of the Emergency Medical Unit should remain at their station, to which the injured will be directed or transported on stretchers by the Rescue Squads and volunteers enlisted by them for this purpose. The work of the Casualty Station is to be limited to emergency first aid procedures—the relief of pain, prevention of shock, control of hemorrhage, care of burns, application of simple splints and of surgical dressings and, not least, the preservation of morale by the establishment of confidence. The seriously injured will be evacuated as rapidly as possible by ambulance or other vehicle to a hospital. Those with minor injuries will go to their homes or to temporary shelters.

If necessary, the squad leader in charge of a Casualty Station may split off one or more teams of one physician and assistants, dispatching them to set up subsidiary First Aid Posts at other sites.

It will be advisable for the local Chief of Emergency Medical Service to prepare a spot map of the area to indicate all out-patient clinics, health centers and their substations, and all police and fire stations or other sites which could serve in an emergency as Casualty Stations or First Aid Posts. He should also maintain an inventory of available transportation.

E. Decontamination Stations. A subsequent bulletin will deal with the structural requirements of Decontamination Stations and with details concerning the care of casualties from chemical agents.

F. Rescue Squads and Stretcher Teams.* Casualties will be conducted on foot or transported on stretchers to the nearest Casualty Station or First Aid Post by Rescue Squads of the police, fire, or other municipal department. These Rescue Squads may be assisted by Air Raid Wardens and by volunteers enlisted at the time. Police and fire reserves should be well trained in first aid and stretcher bearing, and organized into Rescue Squads of four or eight, headed by a squad leader. By the addition of volunteers, a Rescue Squad is capable of being multiplied into as many stretcher teams as there are members, each trained member becoming the leader of a team.

*Rescue Squads consist of auxiliaries of the police or fire department, who are trained and equipped for clearance and demolition work. Although their function is to extricate the injured, they have also had training in first aid and in stretcher bearing so that each member can serve as the leader of a Stretcher Team. Their first aid services at the time of the disaster should be restricted solely to most urgent needs such as the arrest of profuse bleeding or the application of a leg splint. Their primary object should be to remove the injured as soon as possible from the scene of danger with the aid of Volunteer Stretcher Teams and get them to a First Aid Post or Casualty Station.

*Advanced First Aid course prepared by the Office of Civilian Defense in collaboration with the American National Red Cross.

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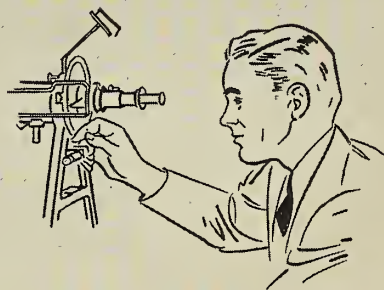
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Provision should be made for the storage of standard stretchers, collapsible cots, and blankets in designated locations, such as police and fire stations, hospitals, health centers, or other suitable place. The number of standard stretchers stored in each police and fire station should be equal to the number of members of the station's Rescue Squads.

It will be advisable to have three times as many collapsible cots as stretchers and two blankets for every stretcher and cot. This equipment should be transported by the truck carrying the Rescue Squad to the site of the Casualty Station or First Aid Post.

G. Records. Identification tags should be affixed to the injured by the Rescue Squad or else immediately upon arrival at the Casualty Station or First Aid Post. A duplicate record should be kept in a book which should be standard equipment of each medical emergency team. The record should include the name or other identification, address, person to be notified, diagnosis, first aid administered, morphine if given, and disposition. A form approved by the Medical Division of the Office of Civilian Defense will be found in a supplementary memorandum on equipment. One nurse or nurses' aide should be assigned the responsibility for these records. The forehead of tourniquet cases and of patients urgently requiring priority attention should be marked TK or U, respectively, with a red crayon skin pencil, or lipstick.

H. Drills. It is recommended that drills be called at each hospital once a month by the Chief of the professional staff. A record of each drill should be kept by him, which will show the time required for complete mobilization of a squad at the designated point of departure and the condition of equipment and transportation.

It is also recommended that field drills be called unexpectedly by the local Director of Civilian Defense at least every three months for each hospital. Each field drill might appropriately include one or more Rescue Squads of the police, fire, or other municipal department, who will assist the Emergency Medical Squads in setting up Casualty Stations at designated sites. The official in command at the drills should inspect the clothing, equipment, and transportation of all participating units and render a report to the Chief of Emergency Medical Service and to the local Director of Civilian Defense upon the promptness and efficiency of each unit. The larger field drills might include the Canteen and other Emergency Relief Services of the Welfare Department or of the local chapter of the American Red Cross or other local agency.

IV. Base and Evacuation or Clearance Hospitals. In order to prepare for the release of hospital beds within the area for large numbers of casualties, the Chief of Emergency Medical Service should make an inventory of hospitals, convalescent homes, and other institutions within a radius of fifty or more miles, to which maternity services, children's wards, certain categories of the hospitalized sick, and convalescents could be transported. Provision should also be made for the assembly and storage of an adequate supply of hospital cots, mattresses, blankets, and other equipment which may be required to provide for emergency increase in bed capacity of voluntary and governmental hospitals. In the event of actual destruction of hospitals, it may become necessary to consider evacuating casualties to Base Hospitals and transforming hospitals near the scene into Evacuation or Casualty Clearance Hospitals.

Upon receiving the first emergency call, the hospital should order all members of its visiting staff by telephone or police radio call to report to the hospital and stand by for the care of the injured received from the Casualty Stations and First Aid Posts.

V. Augmentation of Nursing Services. In the face of the need for rapid expansion of nursing services for civilian defense, the number of available nurses is being depleted because of the requirements of the military forces and the public health and industrial hygiene services. An attempt is being made to compensate for this deficiency by the training of subsidiary hospital workers through the NYA, WPA, and other programs. The Office of Civilian Defense in collaboration with the American National Red Cross has revised the instruction curriculum for Volunteer Nurses' Aides, so as to provide for a period of intensive practical instruction in hospitals under the direction of a special instructor in charge of the training and use of Volunteer Nurses' Aides. Upon completion of this practical training, Volunteer Nurses' Aides will become eligible to assist nurses in wards and out-patient clinics of hospitals, or in visiting nurse, public health, industrial hygiene, and school health services. Volunteer Nurses' Aides are intended to supplement the work of the nurse, so that she may be able to serve a greater number of patients. It is recommended that the local Chief of Emergency Medical Service in collaboration with hospital executives and principals of schools of nursing reorganize and intensify the training and the use of Volunteer Nurses' Aides in appropriate hospitals in accordance with the new schedule of the Office of Civilian Defense and the American National Red Cross.

VI. First Aid. First aid instruction should be provided for as large a part of the general population as possible. The local Chief of Emergency Medical Service should, in collaboration with the local chapter of the American National Red Cross, provide training in first aid for at least five per cent of the personnel of all municipal departments and large business and industrial establishments. Upon completion of training, this five per cent should constitute the first aid corps of their municipal department, business, or factory group. The leaders of these corps should be encouraged to take the Instructor's Course of the American National Red Cross so that, when qualified, their services might be utilized for the extension of first aid instruction to all employees and to the general population of the community.

The First Aid Course for Civilian Defense prepared by the American National Red Cross in collaboration with the Office of Civilian Defense is recommended for first aid training. Instructors qualified by the Red Cross may give this training under the direction of the local chapter of the American Red Cross, the local health department, or any other voluntary or governmental agency.

An intensive course of practical training (five two-hour lessons) has been prepared by the Medical Division of the Office of Civilian Defense and the American National Red Cross as supplementary instruction for members of Emergency Medical Field Units and for nursing auxiliaries and members of other Civilian Defense Units (police officers, firemen, and volunteer auxiliaries) who have had previous instruction in first aid. It is designed as a refresher course for the purpose of reviewing and practicing those first aid procedures which are most important in Civilian Defense.

Similar telegrams were forwarded to the Kansas State Hospital Association and to numerous hospitals in the state.

The Society Committee on Medical Preparedness is now preparing a bulletin on this subject which will be forwarded within the near future to all of the county medical societies. The committee will request therein that the county societies and hospitals attempt to comply with these recommendations in the fullest extent possible.

Bulletin number two will be published in a later issue of the Journal.



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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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SELECTIVE SERVICE EXAMINATIONS

Brigadier General M. R. McLean, State Director of Kansas Selective Service, forwarded the following bulletin to all County Selective Service Boards on December 10. As will be noted the bulletin contains a description of certain changes which are to be made in the procedure of physical examination of selective service registrants.

"1. Regulations require that before a registrant can be classified in 1-A he must be given a physical examination.

2. An order has been issued by the Director of Selective Service under the authority vested in him by Paragraph 617 of the Selective Service Regulations as amended by Amendment number forty-nine, and the authority granted under the provisions of Paragraph 119-b, authorizing the State Director of Selective Service for Kansas to order registrants to appear for and submit to a physical examination by an examining board of the armed forces, either in addition to or in lieu of the physical examination provided for in Volume Three, "Classification and Selection."

3. Prior to the pre-induction physical examination, the local examining physician and his assistants will give a cursory physical examination or screening test, which will be the basis of the registrant's classification by the local board insofar as his physical requirements are concerned.

4. The words in Paragraph 342 "who after physical examination" shall be construed to include the examination given by the local examining physician—this screening test, (refer to Paragraph 620).

5. A telegram from the Director of Selective Service dated December 8, 1941, reads: " * * * increased requirements are obviously indicated and State plans should be geared accordingly."

6. Demands upon the State for early and heavy calls are anticipated. Local Boards will therefore take steps immediately to assure a large reserve of men classified in 1-A to meet such calls.

7. Therefore, local boards will proceed at once to order registrants for physical examinations (screening tests) under the provisions of Paragraph 334 of the Selective Service Regulations, and continue such examinations until sufficient men are examined.

8. The matter of conducting such physical examinations (screening tests) is set out in the attached bulletin under the heading of "Directive for Conducting Screening Examinations."

9. After the physical examinations (screening tests) are given by the local examining physician, local boards will proceed immediately to classify all registrants so examined in Class I-A, I-B, or IV-F.

10. Registrants who have defects which in the past would have placed them in I-B or IV-F, but which are remediable, will now be classified in I-A.

11. Immediately upon classification of registrants, Form fifty-seven, will be mailed to each registrants notifying him of such classification.

12. Registrants will then have ten days from date of mailing of Form fifty-seven to appeal to the Board of Appeal from the classification of the local board.

13. Registrants need not and should not be sent to the Medical Advisory Boards, in view of the fact that all doubtful cases and all cases with remediable defects are later to be forwarded to the pre-induction physical examination stations of the examining boards of the armed forces.

14. It is recommended that where advisable "mass examinations" be given by the examining physician of the local board using other physicians to assist him and such volunteer clerical assistants as may be obtained from local organizations or business concerns.

15. Local board clerks should previous to date of examination have inserted the following paragraphs on page four of Form 200:

"This registrant has this date been inspected for manifestly disqualifying defects which are not remediable, and none were found.

"This registrant has this date been inspected for manifestly disqualifying defects which are not remediable, and the following were found."

DIRECTIVE FOR CONDUCTING SCREENING EXAMINATIONS

"1. A physical examination under this directive contemplates that the examining physician will examine the stripped man for obvious physical or mental defects. By this, the examining physician will by inspection and manipulation determine whether or not a man has sufficient thumbs, toes, legs, and arms; that he has no atrophies that will interfere with the functioning of his extremities or other parts of his body; that he has no disqualifying deformities; that he does not have an inoperable hernia; that he has both of his eyes; that he has no undue cardiac pulsations; that he has no discharge of the ears; that he has no discharge of penis, or that he has no other venereal diseases; that he is not grossly overweight or under weight; or that there are no other obviously disqualifying physical or mental defects.

2. It is not contemplated that the heart or the urine or the blood or the pulse will be examined or that the blood pressure be taken or any laboratory measures be employed.

3. The examining physician (dental) will carefully note and record all impairments and will determine whether or not these impairments are remediable. The attention of the examining physician (dental) is called to Section seven of M 1-9 and Medical Circular No. two—Dental. Present information indicates that where a fixed or removable bridge can be used to make up the required number of masticators or incisors and there are sound abutting teeth to which they can be attached, the defects are to be considered as remediable. In cases in which it is necessary to use teeth attached to a plate or denture that rests partially upon the soft part of the gums, the defects are to be considered as not remediable. Complete dentures where they are present, or are required, are not considered as remediable.

4. Careful attention should be paid to the extent of peridonticlasia or pyorrhea that is present and that teeth, with such extensive caries that the pulp is involved, are not used to make up the required number of teeth.

5. Malocclusions that are more severe than those described in Medical Circular No. two—Dental, shall not be considered remediable.

6. All doubtful cases will be considered as qualifying and the registrant shall be classified in I-A."

It is anticipated that the new plan will be placed in effect during the month of January, 1942. However, since the date of its becoming effective and since the provisions of the procedure might need to be changed in view of the present emergency, the Kansas Selective Service Headquarters has requested that all physical examinations be conducted on the present basis until further instructions are issued.

OSTEOPATHS

The Kansas Supreme Court recently overruled the motions for re-hearing which the osteopaths filed in the case of State of Kansas, ex rel., vs. C. V. Moore and the case of State of Kansas ex rel., vs. O. E. Muecke.

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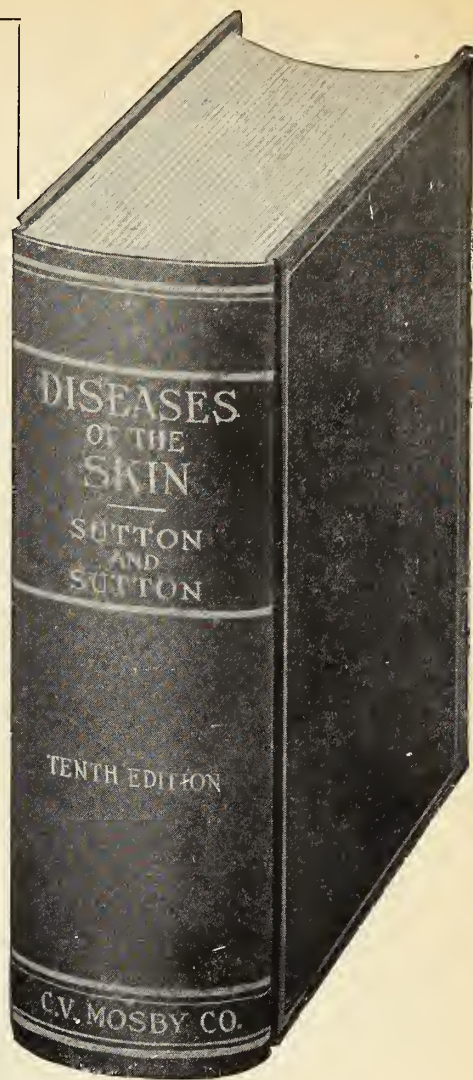
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The opinion in these cases handed down by the Supreme Court on October 11 is, therefore, now final.

Since the above opinion disposes of the material aspects of this litigation it is probably true that the remaining procedures in the cases will consist only of motions for judgment and requests for issuance of injunctions prohibiting the further practice of medicine and surgery by these individuals. The motions for judgment and the requests for injunction will need to be filed in the Barber County District and the Pratt County District Court, in as much as the appeal to the Supreme Court was taken from the decisions made by those Courts.

KANSAS OBSTETRICAL AND GYNECOLOGICAL SOCIETY

The Kansas Obstetrical and Gynecological Society will present the program at a meeting of the Sedgwick County Medical Society to be held on January 6 at the Hotel Allis in Wichita.

The speaker will be Dr. W. M. Allen, Professor of Obstetrics and Gynecology of the Washington University School of Medicine of St. Louis. Dr. Allen will speak on "The Significance of Abdominal Vaginal Bleeding" at 4:30 p.m. and on "Clinical Use of the Sex Hormones" following a dinner at 6:30 p.m.

The meeting is being held in conjunction with the plan, adopted by the Society Committee on Maternal Welfare and the Kansas Obstetrical and Gynecological Society, of presenting speakers on obstetrics and gynecology at various county and district society meetings.

The Kansas Obstetrical and Gynecological Society has also requested that an announcement be made that it will be glad to accept into membership any Kansas doctor of medicine who desires to belong and whose practice includes obstetrics and gynecology.

MEETINGS

A joint meeting of the Council and the Committee on Public Policy was held in Topeka on November 30. Meetings of the Committee on Industrial Medicine and of the Committee on Medical Preparedness were also held in Wichita and Topeka on November 23 and 30 respectively. The minutes of these meetings will be published in an early issue of the Journal.

RESIGNATION

The National headquarters office of the Women's Field Army for Control of Cancer recently announced that Mrs. Donald Muir of Anthony has been appointed as National Deputy Commander of that organization. The appointment necessitates Mrs. Muir's resigning her position as State Commander of the Kansas Women's Field Army and thus she has submitted her resignation of that office.

Mrs. Muir was the first commander of the Kansas Women's Field Army and has served in that capacity since 1935. She has expended a vast amount of time and effort in that connection and to her is due much of the credit for the excellent program the Kansas organization has accomplished. Likewise, as the above appointment indicates, her work in the lay educational aspect of cancer control has attained much National interest. The physicians, who have worked with Mrs. Muir in the development and execution of the program in this State, regret very much the loss of her direct services but they agree that she will be able to provide excellent and helpful assistance in the National program.

The executive committee of the Kansas Women's Field Army will meet in the near future to consider the appointment of Mrs. Muir's successor.

MEDICAL BOARD

The Kansas State Board of Medical Registration and Examination held its regular bi-annual meeting in Topeka on December 8-9. The following members of the Board attended: Dr. M. C. Ruble of Parsons, president; Dr. J. F. Hassig of Kansas City, secretary; Dr. Ralph Ball of Manhattan; Dr. O. L. Cox of Iola; Dr. H. E. Haskins of Kingman; Dr. J. E. Henshall of Osborne and Dr. C. E. Joss of Topeka. Mr. Theo F. Varner of Independence, attorney for the Board also attended.

Examinations were given to the three applicants for licensure.

SYPHILIS FILM

The United States Public Health Service has announced that it has completed a film on "Syphilis" which will be available for showing to county medical societies and other medical meetings.

A description of the film furnished by Dr. R. A. Vonderlehr of the United States Public Health service is as follows: "This is more than simply another film. It represents over a year's work by the medical and educational staff of this Division to produce an effective presentation of the essentials of diagnosis and treatment of syphilis. We have made a careful selection from a wide variety of clinical material. We have photographed the entire film in natural color. We have used not only a veteran narrator to present the lecture, but professional actors to illustrate special points of public health importance. The whole has been reviewed by the foremost clinical and public health authorities, and their reputations stand behind the film."

Loan copies of the movies may be obtained through the Kansas State Board of Health.

STATE MEETING

Copies of the floor plan and prospectus for the 1942 annual session were forwarded on December 11 to approximately two hundred exhibit prospects whose names were included on a list of invitees approved by the Society Committee on Scientific Work.

The management of the Wichita Forum, where the meeting will be held, announced recently that the building will be substantially remodelled during the next year. Various types of partitions, decorations and other facilities are to be added.

The state meeting committees of the Sedgwick County Medical Society and the other county medical societies in that area which are serving as co-hosts have been engaged during the past six months in the preparation of plans for the meeting. Many of the plans and arrangements are now complete.

MINUTES

COMMITTEE ON CHILD WELFARE

A meeting of the Committee on Child Welfare was held in Topeka on October 26, 1941. The members of the committee present were: Dr. B. I. Krehbiel, chairman; Dr. Paul E. Belknap, Dr. Paul C. Carson, Dr. Donald N.

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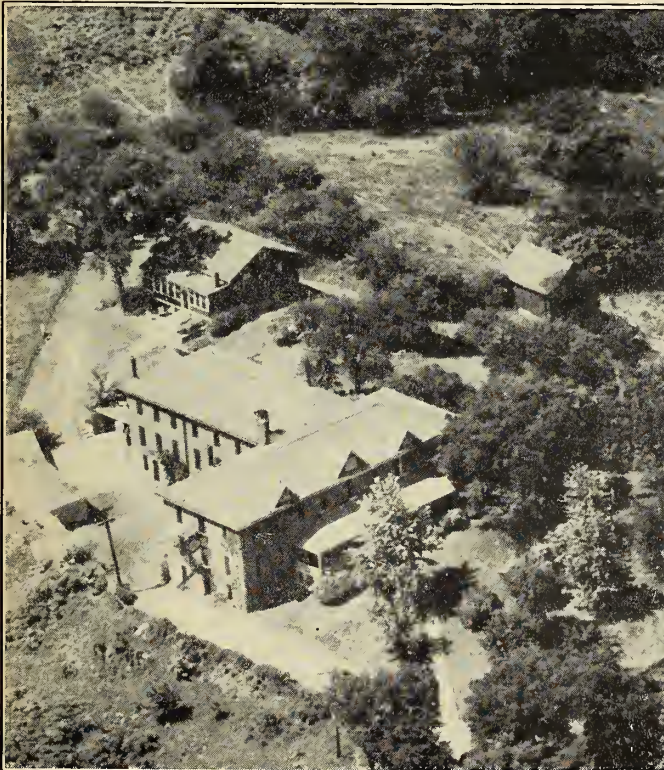
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Medearis, Dr. H. R. Ross, and Dr. J. H. Wheeler. Dr. F. C. Beelman and Mr. C. G. Munns were also present.

The following reports were presented to the committee:

That a survey of respirator facilities in the state seems to indicate that all areas have adequate facilities of this kind. The central office was asked to send a bulletin to the county medical societies, listing the location of present respirators in the state, the areas in which the present number of respirators is believed to be adequate or inadequate, and suggesting that in areas where the present number of respirators is deemed to be adequate the county medical societies attempt to assist in having funds available for medical equipment be expended for other facilities rather than for the duplication of un-needed respirators.

A report was given concerning correspondence the central office has had with the Commonwealth Fund in regard to possibilities for having the pediatrics post-graduate program of that organization offered in this state, and of the fact that the Commonwealth Fund has advised that funds are not available for this purpose at the present time. The central office was asked to write the Oklahoma State Medical Association concerning the interest obtained in its program of this kind and to further correspond with the Commonwealth Fund as to possibilities for institution of a Kansas program.

Dr. Ross reported that Dr. P. R. Ensign, who was appointed as a member of this committee for 1941-1942, has left the state and that he will therefore be unable to represent the Kansas State Board of Health on the committee. The committee asked Dr. Ross as to whom he would like to have represent his department in Dr. Ensign's place. Dr. Ross stated that Dr. F. L. Mays will be appointed as head of the Division of Child Hygiene of the Kansas State Board of Health and that he believes Dr. Mays would be an excellent appointee. The central office was asked to forward this recommendation to Dr. C. D. Blake, president.

In a report of the contemplated activities of the Division of Child Hygiene of the Kansas State Board of Health, for 1941-42, Dr. Ross stated that no activities other than those undertaken during recent years are being planned. He suggested, though, that funds will be available for post-graduate work in pediatrics and that his department would appreciate the suggestions of the committee as to the type of course or other activity which might be presented in this connection. Following discussion of various types of post-graduate programs which might be suitable for this purpose, the committee expressed the belief that the membership would be interested in a circuit course consisting of round table discussions wherein physicians might ask questions on pediatric subjects in which they are interested. Dr. Belknap was asked to serve as a subcommittee on behalf of the committee to assist Dr. Ross in preparing plans for a program of this kind.

Kansas quarantine regulations and their observance were then discussed. A request was made that Dr. Beelman have a report prepared concerning the scientific accuracy of the present quarantine regulations, of needs which exist for additional regulations to be added thereto and of ways in which the mechanics of quarantine can be improved to promote better compliance. The committee felt that study of a report of this kind would enable it to assist in developing a more practical and workable quarantine program for this state.

In a discussion of Kansas school health problems and of ways in which Kansas school health programs in this state can be improved, a report was made of the activities now

being devoted to this subject by a committee of the Kansas Legislative Research Council. Dr. Krehbiel was asked to serve on behalf of the committee in assisting the Legislative Research Council in any way desired in this connection. Dr. Krehbiel was also asked to confer with the Kansas State Department of Education and the Kansas State Teachers Association as to possibilities for cooperating with those organizations in the development and operation of an extensive school health program.

Dr. Wheeler presented a report of the work he has accomplished on behalf of the committee, in conjunction with Kansas State College and the Kansas State Board of Health, on the possible relation of poliomyelitis to human encephalitis and animal encephalitis. The committee expressed particular interest in this work and commended Dr. Wheeler for the excellent assistance he has given on this subject. A suggestion was made that Dr. Wheeler prepare his findings in article form for publication at an early date.

Information was presented by Dr. Belknap and Dr. Krehbiel concerning the Conference on Nutrition held in Topeka on October 17 and 18, and of the program being contemplated by the Kansas Committee on Nutrition. Announcement was made that Dr. Belknap will serve as a liaison representative of this committee on the State Nutrition Committee, and the committee offered its assistance in any way desired on this subject.

The possibility of publishing a bulletin to the county medical societies on the indications and contra-indications for the use of tetanus toxoid was discussed. Decision was made that further experience should be observed on this preparation before this is done.

Dr. Krehbiel reported that the Children's Bureau of the United States Department of Labor has recently required that agencies receiving federal financial assistance for crippled children's programs shall utilize the services of a medical consultant and that Dr. Paul Carson has agreed to assist the Kansas Crippled Children's Commission in that capacity during the next year.

Adjournment followed.

COMMITTEE ON CONTROL OF CANCER

A meeting of the Committee on the Control of Cancer was held in Topeka on October 9, 1941.

The members of the committee present were: Dr. Howard Snyder, chairman, Dr. James Hibbard, Dr. L. W. Reynolds, Dr. C. C. Nesselrode, and Dr. Marion Trueheart. Mr. C. G. Munns was also present.

In a discussion of the plans of the committee for the next year, a suggestion was made and approved that the chairman be authorized to appoint subcommittee chairmen to carry out the various projects approved by the committee.

It was agreed that completion of the survey on present and needed cancer therapy equipment in Kansas and preparation of a bulletin on this subject for the county medical societies was desirable.

Following a discussion of post-graduate activities which could be sponsored by the committee this year, the following activities were agreed upon:

1. That a recommendation be made to the Kansas State Board of Health wherein that organization will send postal cards containing suggestions as to the diagnosis and treatment of cancer patients each month to all of the doctors of medicine in this state.

2. That arrangements be made to present a four or five



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day post-graduate course on cancer at some central place in the state during the next year.

3. That the council be interviewed concerning the advisability of conducting a state-wide post graduate program on cancer through regular county medical society meetings or joint meetings of county medical societies embracing several counties. That the speakers for this program in each instance would be furnished by the Committee on Control of Cancer from its membership or from outside the membership of the committee as desired by county medical societies, and that the speakers would be Kansas physicians.

The committee agreed that continued assistance to the Kansas Women's Field would be given to the best of its ability. It was the feeling of the committee that the members of The Kansas Medical Society should be asked to become sustaining members of the Women's Field Army. It is also the feeling of the committee that the W. F. A. should sponsor a cured cancer club.

It was agreed that further revision and improvement of the Society lay and professional loan packets should be made.

The decision was made that the committee recommend to the Editorial Board that the cancer section of the Journal not be carried as a separate section; that the publication of articles on cancer in the original article section should be encouraged instead; and that Dr. Hellwig be asked to serve as a subcommittee chairman on behalf of the committees to assist the Editorial Board in obtaining six or eight worthwhile articles on cancer for this purpose next year.

It was agreed that the committee should render assistance in the provision of cancer exhibits at lay and professional meetings. No definite program was outlined.

The committee discussed the possibility of recommending to the Kansas State Board of Health that a division of cancer control be added to the work of that organization. Since it was the belief of the committee that certain difficulties are experienced in attempting to maintain separate divisions on particular diseases over a period of years, it was believed that advantages might exist if the Kansas Board of Health establishes a division on diseases of high incidence which could assist in cancer, heart disease, nephritis and similar diseases at the present time, and which could also assist in additional causes of high mortality which may develop in the future. The central office was asked to communicate this suggestion to the Kansas State Board of Health.

Decision was made that the lay educational program on cancer conducted by the committee should be continued as in the past.

It was agreed that the committee should prepare a lay pamphlet on cancer of the stomach which would be made available for distribution by the Women's Field Army and other sources.

It was the opinion of the committee that numerous advantages are afforded in the organization and maintenance of approved cancer clinics of the type recommended by the American College of Surgeons and it was decided, therefore, that the committee will attempt to assist in expanding the number and accessibility of clinics of this kind in the state. Dr. Nesselrode was asked to investigate further the requirements made by the American College of Surgeons for the establishment of its approved clinics and as to whether their program is practical and satisfactory for this state.

Cancer of the stomach was chosen as the subject which the committee will further this year both in its lay and professional activities. Decision was made that a paper

and talk outline on this subject should be prepared for assistance to the membership in making lay talks.

Decision was also made that a letter shall be issued to each service club in the state recommending the presentation of a program concerning cancer of the stomach during the next year. This letter is to call attention to the desirability of the membership of each service club hearing such a talk and also call attention to the state wide program on cancer of the stomach which is being conducted by the Women's Field Army and The Kansas Medical Society this year.

MEMBERS

Dr. L. G. Glenn, recently of Council Grove, has removed to Protection where he formerly practiced.

Dr. C. W. Haines formerly of Havens has accepted a position as resident surgeon at the Jackson Clinic in Madison, Wisconsin.

Dr. Ransley J. Miller of Topeka has been appointed acting secretary of the Topeka Board of Health.

Dr. W. M. Mills of Topeka presented a paper entitled "Benign Retroperitoneal and Mesenteric Tumors" at the annual meeting of the Western Surgical Association, which was held in St. Paul, Minnesota, on December 5-6. Dr. Mills was also re-elected as a member of the Executive Committee of that organization.

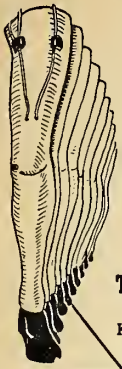
Dr. C. B. Trees of Topeka left recently for Dallas, Texas, where he will be a resident surgeon in the Texas Scottish Rite Hospital for Crippled Children, during the next year.

The central office is sorry to announce that by reason of illness, it has temporarily lost the services of Miss Joyce Ryerson, who has acted as one of the secretaries in that office for the past three and one-half years.

COUNTY SOCIETIES

At a recent meeting of the Brown County Medical Society held in Horton, the following officers were elected for the next year: Dr. J. B. Anderson of Morrill as President; Dr. R. T. Nichols of Hiawatha as Secretary.

The Butler-Greenwood County Medical Society held a meeting in El Dorado on December 12. Mr. George Lerigo, of the Kansas State Board of Health of Topeka, discussed the program being conducted by that board in regard to the rehabilitation of rejected selective service registrants. The following officers were elected to serve during the next year: Dr. L. F. Steffen of El Dorado as President; Dr. S. N. Mallison of Augusta as Vice-President; Dr. Wm. E. Janes of Eureka as Secretary-Treasurer; Dr. R. B. Earp of El Dorado as Director; Dr. L. W. Fowler of El Dorado as a member of the Board of Censor; Dr. Wm. E. Janes and Dr. Floyd Dillenbeck of El Dorado as Delegates; and Dr. R. W. Moore of Eureka and Dr. Harry Lutz of Augusta as Alternates. The Society decided not to hold its customary dinner for the retiring president, this year, but to utilize the funds usually expended therefor to the purchase of a \$100 Defense Bond.



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GYNECOLOGY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Clinical and Special Courses starting every week.

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The Dickinson County Medical Society met in Abilene on November 20. Dr. Tracy Conklin Jr. of Abilene and Dr. L. G. Heins of Abilene were the speakers. The following officers were elected for next year: Dr. Tracy Conklin Jr., as President; Dr. Theo Kroesch of Enterprise as Vice-President; Dr. Daniel Peterson of Herington as Secretary-Treasurer; Dr. W. A. Klingberg of Hope as a member of the Board of Censor; Dr. H. R. Turner of Hope as Delegate and Dr. Daniel Peterson as Alternate.

The Lyon County Medical Society held a meeting in Emporia on December 1. Dr. C. W. Lawrence of Emporia discussed "Appendicitis Cases in the Newman Memorial Hospital, a Series of 999 Cases." The following officers were elected for the next year: Dr. Clyde Wilson of Emporia as President; Dr. John Nienstedt of Hartford as Vice-President; Dr. C. Herbert Munger of Emporia as Secretary-Treasurer; Dr. C. C. Underwood, Dr. C. E. Partridge and Dr. C. S. Trimble, all of Emporia as members of the Board of Censor.

The members of the Leavenworth County Medical Society met in Leavenworth on December 8, at which time the following officers were elected for the next year: Dr. P. R. Webster of Leavenworth as President; Dr. R. H. Moore of Lansing as Vice-President; Dr. R. S. McKee of Leavenworth as Secretary-Treasurer; Dr. G. R. Combs of Leavenworth as a member of the Board of Censors.

At a meeting of the Marion County Medical Society, held in Marion on December 3, the following officers were elected: Dr. R. C. Smith of Marion as President; Dr. A. K. Ratzlaff of Goessel as Vice-President; Dr. R. R. Melton of Marion as Secretary-Treasurer; Dr. H. F. Janzen of Hillsboro, Dr. G. J. Goodsheller of Marion and Dr. W. M. Tate of Peabody as members of the Board of Censors; Dr. R. R. Melton as Delegate; and Dr. A. K. Ratzlaff as Alternate. At another meeting of the society held on November 12, Dr. C. F. Taylor of Norton spoke on "Diseases of the Chest Simulating Tuberculosis" and Dr. W. F. Stone of Norton discussed "Contact Cases of Tuberculosis."

The Mitchell County Medical Society and the staff of the Community Hospital at Beloit held a joint meeting and dinner at the hospital on November 19. Dr. C. D. Blake of Hays, President of the Society, presented a paper on "One Thousand Seven Hundred and Thirty Cases of Appendicitis Treated Surgically" and also discussed several present activities of the State Society. Dr. John M. Porter of Concordia, Secretary of the Society, also attended.

The Pratt County Medical Society met in Pratt on November 28. Dr. Peter Bohan of Kansas City, Missouri, spoke on "Casual Factors in Angina Pectoris and Coronary Infection."

The Sedgwick County Medical Society held University of Kansas School of Medicine Night in Wichita on November 18. Dean H. R. Wahl of Kansas City spoke on "The Medical School," Dr. J. A. Billingsley of Kansas City discussed "Anisikonia," Dr. Mahlon Delp of Kansas City spoke on "The Treatment of Arsenical Dermatitis with Vitamine C" and Dr. Frank C. Neff of Kansas City spoke on "Adrenal Androgenic Tumors."

The Shawnee County Medical Society held its annual meeting on December 1 in Topeka. Mr. Frank Lawrence of Enid, Oklahoma, was the speaker. Officers elected for the next year were as follows: Dr. E. H. Decker of Topeka as President; Dr. A. J. Brier of Topeka as President-Elect; Dr. F. C. Taggart of Topeka as Vice-President; Dr. Leo Smith of Topeka as Secretary; Dr. B. J. Ashley of Topeka as Treasurer; Dr. W. H. Weidling of Topeka as a member of the Board of Censor.

The Southeast Kansas Medical Society met in Independence on November 12. The program for the meeting was promoted by the Kansas Obstetrical and Gynecological Society. Dr. E. D. Plass, chief of the Department of Obstetrics and Gynecology of the University of Iowa School of Medicine, at Iowa City, was the guest speaker.

A meeting of the Wyandotte County Medical Society was held in Kansas City on December 16. Dr. J. W. May of Kansas City spoke on "Common Tumors of the Eye" and Dr. W. W. Summerville and Dr. C. J. Mullens both of Kansas City, discussed the paper. At a meeting of the society held on November 18, Dr. H. N. Tihen of Wichita spoke on "Review of Gastro-Enterology."

DEATH NOTICE

Dr. Andrew P. Brown, 32 years of age, of Alton, died of poliomyelitis in Panama City, Florida, on November 3. Dr. Brown was graduated from the University of Kansas School of Medicine in 1932 and was a Captain in the Medical Corps of the Army at the time of his death. He was a member of the Saline County Medical Society.

Dr. Calvin H. Maust, 65 years of age, of Lecompton, died on November 4. Dr. Maust was graduated from the Central Medical College of St. Joseph, Missouri, in 1905. He was a member of the Douglas County Medical Society.

Dr. Lloyd Henry Sarchet, 69 years of age, of Wellington, died on November 14. He was born in Walker, Iowa, on June 17, 1872, and was graduated from the State University of Iowa College of Homeopathic Medicine of Iowa City in 1898. Dr. Sarchet was the county health officer of Sumner County and the city health officer of Wellington at the time of his death. He was a member of the Sumner County Medical Society.

ANNOUNCEMENT

The Fourth Annual Congress of Industrial Health will be held in Chicago at the Palmer House on January 12-13. The meeting which is sponsored by the American Medical Association, is open to all physicians and others interested in industrial health. There will be no registration fee.

The American Urological Association offers an annual award "not to exceed \$500.00" for an essay (or essays) on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the committee on scientific research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

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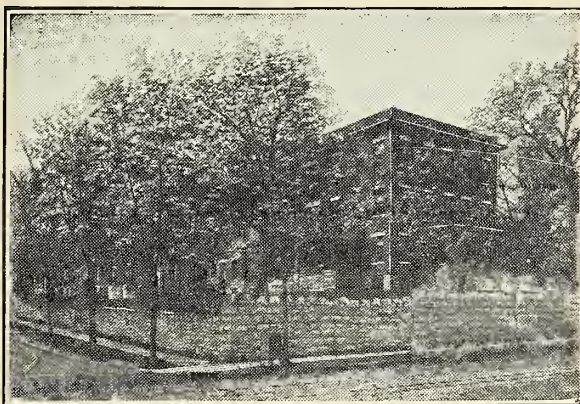
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Essays shall be in the hands of the Secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Connecticut, on or before April 1, 1942.

The Fourth Annual Forum on Allergy will be held in Detroit, Michigan, on January 10-11, 1942.

KANSAS MEDICAL ASSISTANTS

A joint meeting of the Cowley County and the Sedgwick County Medical Assistants Society was held in Arkansas City on November 14. Sixty-eight persons attended.

The Lyon County Medical Assistants Society held a dinner meeting in Emporia on December 2. Mrs. C. C. Underwood, Jr., showed colored movies of Wyoming and California.

The Reno County Medical Assistants Society met in Hutchinson on December 9. Mr. Martin Dupray of Hutchinson spoke on "Laboratory Work." The organization adopted a family for Christmas and the members of the society agreed to donate food, toys and clothing for that purpose. At the October 14 meeting of the organization Mrs. Avis Todd, local Red Cross secretary spoke on Volunteer Nurses' Aide Corps work. The goal of the National organization is 100,000 trainees enlisted for service. At the November 12 meeting of the society, Marjorie Reyl spoke on "Requirements of a Receptionist," Blanch Ashcraft spoke on "Duties of a Good Assistant," Edith McMillan spoke on "Compensation Reports," Mrs. Frank

Nichols spoke on "Collections" and Mrs. Robert Bullard spoke on "Work of the City Physician." Mrs. Nichols submitted a creed which was adopted by the club and will be submitted to the State Medical Assistants for adoption.

A meeting of the Riley County Medical Assistants Society was held in Manhattan on December 1. Dr. K. F. Bascom of Manhattan discussed "Interesting Case Histories and Diagnosis." The organization voted to donate a Christmas basket to the needy.

The December 17 meeting of the Sedgwick County Medical Assistants will feature the installation of officers.

The Topeka Physicians Assistant Society held a meeting in Topeka on December 1. Mrs. Harry Davis of Topeka presented a book review. All members brought gifts for a basket to be given to a needy family for Christmas. The next meeting will be held on January 5.

NOTICE

Annual dues of the Kansas Medical Assistants Society, of fifty cents, are now due and payable to your local secretary or to Mildred McClure, Recording Secretary, 430 Brotherhood Building, Kansas City.

It is not necessary that you belong to a local organization to become a member. A letter from your physician, stating that you have been employed as an assistant for one year or longer and mailed with your dues of fifty cents, is all that is required. Membership cards will be required for registration at the May meeting of the society.

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AUXILIARY

PRESIDENT'S MESSAGE

It was indeed a privilege to attend the board meeting of the National Auxiliary held at the Palmer House in Chicago on November 14. These Women coming from forty different states presented a varied and enlightening insight into American womanhood. It was plainly seen that they considered the object of the Auxiliary as stated in article eleven of our constitution to be the highest ideal of our organization.

Mrs. Mosiman was a most efficient presiding officer and kept reports, discussions, etc., moving right along so that interest did not lag at any time. The keynote of all programs this year should be health defense, and the real responsibility of this rests entirely on local auxiliaries. Health programs should be headed and promoted by medical men. One state reported that one county procured fifty doctors as speakers and held a two days' conference on health. It was stated several times: "Stress health only through doctors." When giving statistics on health be sure you know who is the authority on this data. It might come from political sources rather than from medical men.

It was especially urged, that whenever an auxiliary held an interesting program, they send the report to our Press and Publicity Chairman. She will either use it in our News Letter, page in the Journal of The Kansas Medical Society, or send it to the National Chairman. She may use it in the American Medical Association Auxiliary News.

Each month there will be additional news given from the National Board Meeting.

The Christmas month is here. May we help to promote "Peace on Earth, Good Will to Men," in the hearts of all with whom we come in contact. Let us be eager to bring some joy and happiness to doctors' widows and also to the families of those doctors who are in service this year.

"It's Christmastide. Let's clean the slate
Of every old-year grudge and hate.
Let's reach out friendly hands and grip
Each other in warm comradeship."

Sincerely,

Mrs. W. Y. Herrick.

DEATH OF MRS. RED

Mrs. Samuel Clark Red of Houston, Texas, founder of the Woman's Auxiliary to the American Medical Association, died suddenly on August 10. Mrs. Red was the first president of the Auxiliary to the American Medical Association (1922-1923) and was also president for the two succeeding years.—Journal of the American Medical Association.

The Shawnee County Auxiliary held a musical tea at the home of Mrs. C. F. Attwood in Topeka on December 8.

The Women's Auxiliary to the Sedgwick County Medical Society entertained with a tea on November 10 at the home of Mrs. G. E. Cowles in Wichita. Mrs. Frank Yoder gave a talk on "Romance of Glass" displaying a collection of early American glass. The girls' Sextette of East High School sang. The organization entertained with a luncheon on December 8. Mrs. J. W. Shaw gave a book review. Mrs. W. Y. Herrick of Wakeeney, president of the State Auxiliary, gave a report on the National Board Meeting held in Chicago.

The Labette County Medical Society and Auxiliary held a dinner meeting in Parsons on October 29 at the State Hospital. Dr. Logan Clendenning of Kansas City, Missouri, spoke on "Points of Medical Historical Interests," to forty doctors and their wives.

The members of the Labette County Auxiliary were entertained with a tea at the home of Mrs. Charles Miller in Parsons on December 10, honoring Mrs. W. Y. Herrick of Wakeeney, President of the Kansas State Auxiliary. Mrs. T. D. Blasdel of Parsons was the assisting hostess. Mrs. Herrick presented a report on the National Auxiliary Board meeting, which was held in Chicago on November 14-15.

Dr. and Mrs. M. C. Ruble entertained the Labette County Medical Society and Auxiliary with a dinner at their home in Parsons on December 17.

NOTICE

As State Historian and Archive Chairman, I will appreciate it very much if all county historians would save all clippings pertaining to work of the Kansas Medical Auxiliary, so that I may have them later in the year for recording.—Mrs. H. H. Woods, Topeka.

HAS YOUR AUXILIARY HELD A MEETING RECENTLY?

If so—Where? When? And who spoke?

Please send news of this type to: Mrs. R. J. Miller, Chairman, Press and Publicity, 1300 Lakeside Drive, Topeka, Kansas.

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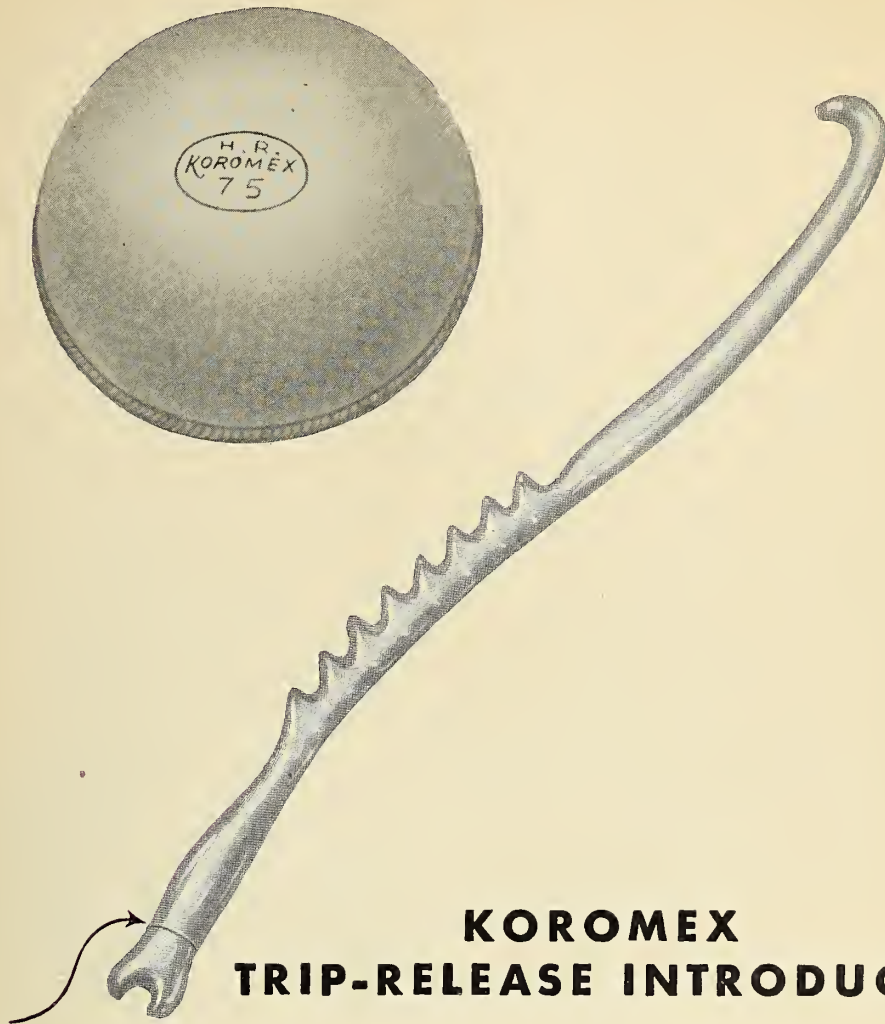
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In 1937 sulfanilamide became available generally and proved to be extremely useful in the treatment of infections due to B. hemolytic streptococci and meningococci. In addition, the drug soon was being employed in urinary tract infections, trachoma, chancroid, lymphogranuloma venereum, and certain cases of gas gangrene, and it demonstrated some benefit in gonorrhea, undulant fever, and actinomycosis. Approximately two years later sulfapyridine was being widely used in the treatment of pneumococcal infections and was found to be more effective than sulfanilamide against gonococci. After only another year sulfathiazole begun to replace sulfapyridine because it was as effective against pneumococci and gonococci, more effective against staphylococci, and occasioned fewer reac-

tions. In urinary tract infections sulfathiazole was superior to sulfanilamide in most cases. Now sulfadiazine is being introduced and it has the advantage of a lower index of toxicity, which makes possible the maintenance of high blood levels.

This group of drugs has become exceedingly widely employed. Soon there will be only a small proportion of the general population which has not received one of them as treatment of some variety of infection (Southern M J., 34:1214, 1941). It behooves the physician to choose carefully the most specific and least toxic one for his case. A wide variety of dosage forms have been made available by Eli Lilly and Company, of Indianapolis, Indiana.

The Library of the Medical Department of the University of Kansas has every desire to be of service to the medical profession in the state. Any physician who wishes to avail himself of the facilities of the Library will be welcome both in the use of its periodicals, bound volumes of periodicals, and monographs and text-books.

Under certain circumstances, provided the volumes are not being actively used by the students, the Library will send such volumes as are needed to physicians in the state, on request, for a period of one week, provided carriage charges are paid both ways.

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